1831. SIXTY-THIRD YEAR. 1893.

C. AULTMAN & CO.

..... MANUFACTURERS OF .....

THRESHERS AND ENGINES

OFFICERS:

LEWIS MILLER, PRESIDENT.
C. L. JONES, VICE-PRESIDENT.

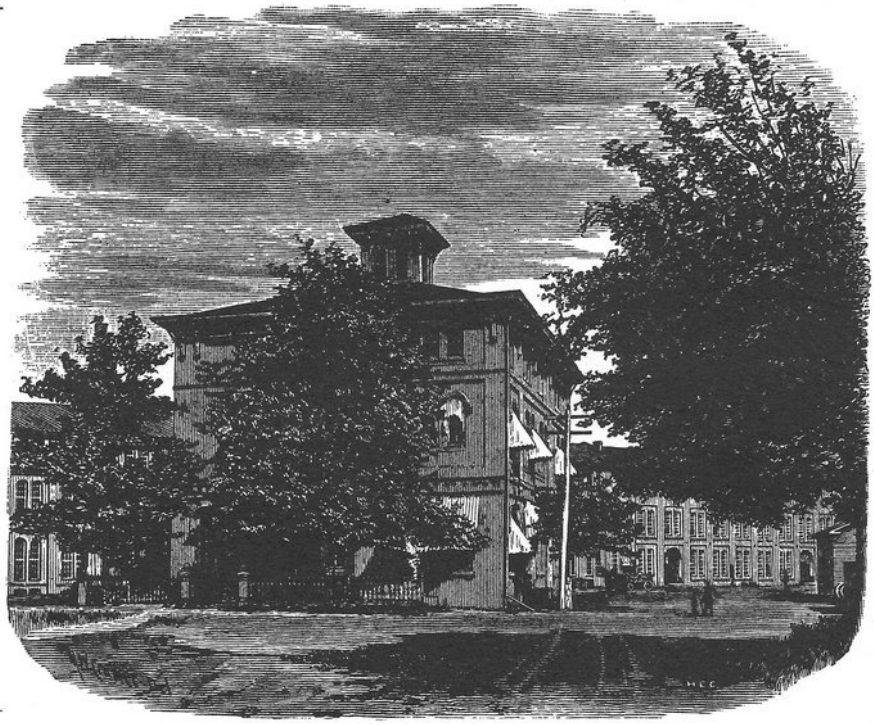
ROBERT A. MILLER,
GENERAL MANAGER.

J. A. LINVILLE, SECRETARY.
M. B. COX. TREASURER.

* * *

NEW STAR
THRESHERS.
STAR
AUTOMATIC
STACKERS.
WAGON
LOADERS.
WEIGHERS.
BAGGERS.

* * *



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STAR
ENGINES.
VERTICAL,
STRAW-BURNING,
AND SKID
ENGINES.
HORSE-POWERS.
TANKS.
SAW MILLS.

* * *

HOME OFFICE OF THE COMPANY: CANTON, OHIO, U. S. A.

BRANCH OFFICES AND GENERAL AGENCIES:

C. AULTMAN & CO., CINCINNATI, O.
C. AULTMAN & CO., 18 and 20 W. Randolph St., CHICAGO, ILL.
C. AULTMAN & CO., FARGO, N. DAK.
C. AULTMAN & CO., INDIANAPOLIS, IND.
C. AULTMAN & CO., LOUISVILLE, KY.
KINGMAN & CO., KANSAS CITY, MO.
KINGMAN & CO., OMAHA, NEB.
CHAS. H. DODD & CO., PORTLAND, ORE.
C. AULTMAN & CO., CHATTANOOGA, TENN.
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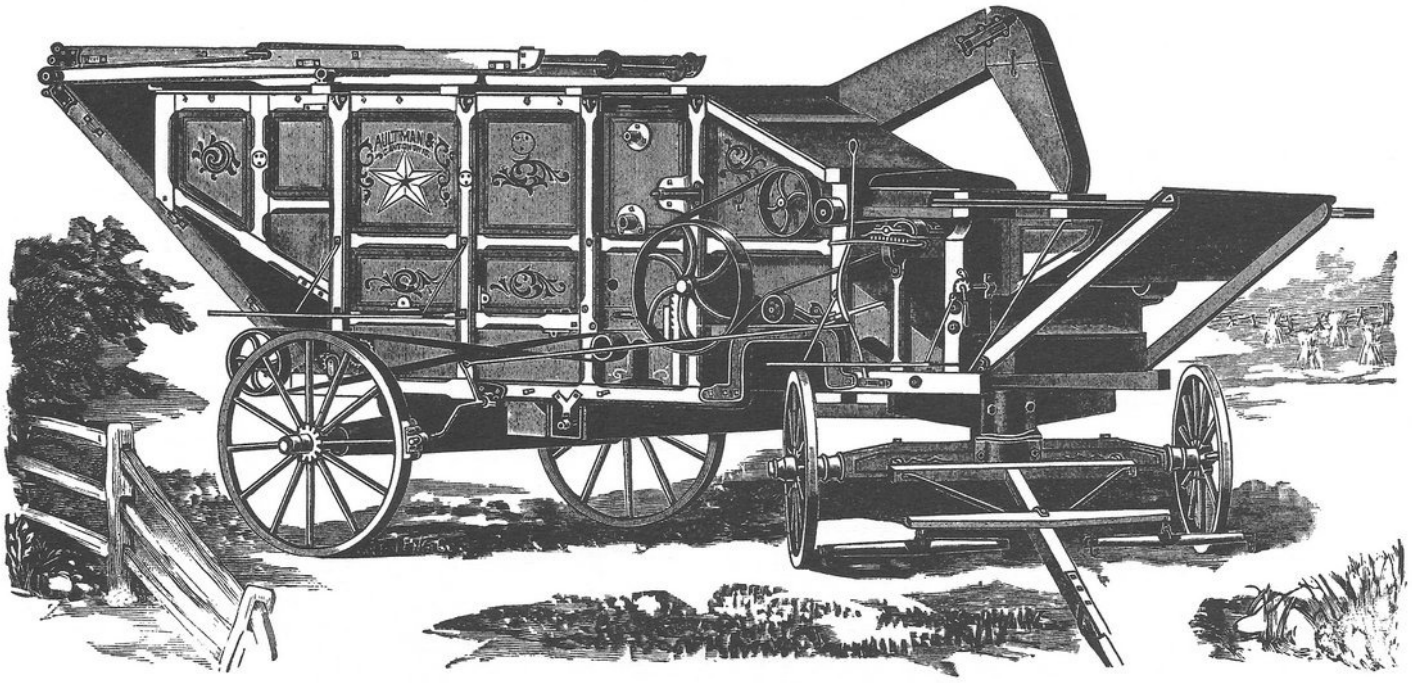
MANSUR & TEBBETTS IMPLEMENT CO., ST. LOUIS, MO.
MANSUR & TEBBETTS IMPLEMENT CO., NEW ORLEANS, LA.
MANSUR & TEBBETTS IMPLEMENT CO., DALLAS, TEX.

NOTE.—Letters of inquiry for prices of our different machines and terms of sale, and application for agencies and the address of agents, should be addressed to our office nearest to your place of residence, or to the home office at Canton, Ohio.
All inquiries will receive prompt and careful attention.

THE STAR THRESHER.



The Star Thresher is widely recognized as a grain saver of the highest type of excellence. Its superiority in separation and cleaning has obtained for it a wide patronage and familiarized most thresher-men with its extraordinary merits. Its characterizing peculiarities will be obvious from the cut, and the following description of the method employed:

Upon leaving the cylinder the straw is hurled against a beater, which detains all flying grains from being imbedded in the straw. Between cylinder and beater the straw passes over a rake with teeth of round iron about a foot long. Between the teeth of this rake and the open bars of the concaves, the bulk of the grain falls down and remains separated from the straw.

The grain web, which carries the straw to the top of the machine, is a positive assurance against choking. The action of the beater, to which reference has already been made, is in the same direction as the web, but being slower, it pulls apart and spreads out the straw.

At the top of the machine the straw is flung against a second beater, by which it is buffetted and thrown down on the oscillating table. The latter is about half the length of the vibrating table below. Its upper surface is armed with risers which greatly disarrange the straw in its passage. Its rear end is pointed, or triangular. As the result of this arrangement the straw stream, which had already been flattened and well widened out by beaters and web, is once again distributed toward the sides of the machine.

After its fall from the oscillator, the straw is carried on by the backward and upward throws of the vibrating table to the elevating extension table, by which it is tossed out upon the stacker.

Separation is, therefore, accomplished by the differing speeds of the first beater and web; by the fall of the straw from the web to the oscillator; by the risers on both separating tables; and notably by the fall from the pointed oscillator to the vibrator.

Another most valuable feature of the Star, which is absent on all other separators, lies in the fact that the slats of the oscillating table are wide apart, thus allowing broken straws and short stuff to fall at once down on the long table, the slats of which are close together. The front half of this lower table has only this short stuff to deal with. This part of the separation, which is the most difficult part, is therefore doubly effected and perfectly accomplished, so that by the time the finer stuff rejoins the layer of longer straw, which is passing backward from above, the grains in it have all gone down in the shoe and been saved.

The cleaning parts of the Star are greatly relieved by several devices to which attention has already been called. They are exceedingly roomy, thus enabling the machine to thoroughly clean the very large amount of grain which the Star is capable of handling.

With each machine we furnish one pair of riddles for wheat and rye, and another set for oats and barley. The upper riddle for wheat is an iron-lip riddle; the lower riddle is of perforated zinc. For oats the riddles are of the same material, but with perforations specially adapted to that crop.

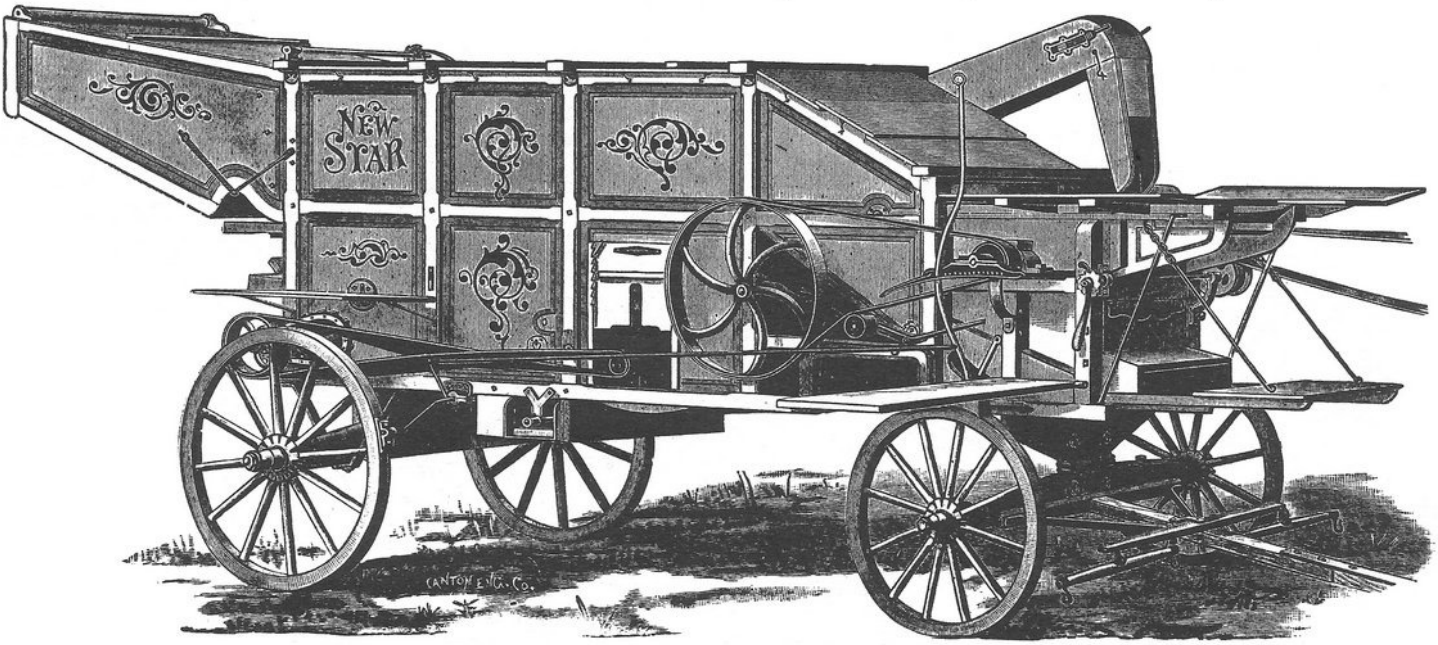
For threshing clover, timothy, flax, and other small seeds, we furnish the finer riddles required in cleaning the same only when specially ordered.

We have made several slight changes on the Star for 1893, one of which consists in making the vibrator table in two parts, hinged in the middle. The pitman has been lengthened, and its connection with the table is at a point near the hinge above mentioned. The gear has been placed on the other side of the machine, and the rear hangers attached inside the separator. While these changes can hardly be expected to promote the efficiency of the Star, which was already all that could be desired, they will, we are confident, add to its strength and convenience.

The Star Thresher will be furnished with special attachments for handling Clover or Rice, when so ordered.

We can also furnish the best form of Bagger, Wagon Loader, Weigher and Swinging Stacker. The Star is equipped with all the appurtenances for insuring its complete operation in the field.

THE NEW STAR THRESHER.



THE NEW STAR THRESHER—Left Side.

IN THESE latter days of improvement and invention, it is well understood that the oldest factories have not maintained their continued prosperity by making old machines. The contrary is nearer the truth. To achieve and maintain pre-eminence, a constant warfare has to be waged for the acquisition of methods which may be the newest, and which *must* be the best. Indeed, it has come to be a maxim that to stand still in the field of mechanical development is to die.

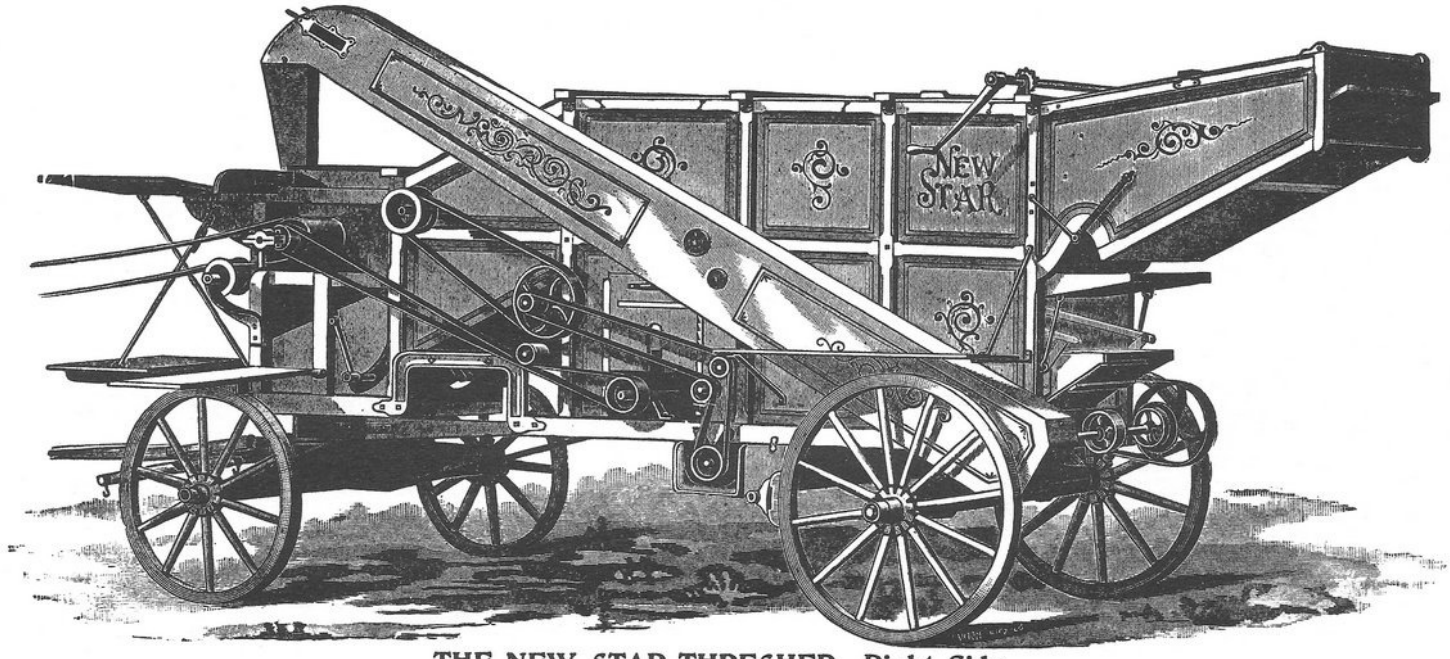
The patrons of the old house of C. Aultman & Co. will, therefore, not be surprised to see that their thresher for the coming season has been strikingly modified. We have named it the *NEW STAR*. Both sides of the machine are represented by the cuts on this page.

It is proper to say that this machine embodies the best results of a series of experiments extending back a number of years.

Two years ago the machine, in restricted number, was placed upon the market. Last year the New Star was furnished in larger number, in sizes varying from 24 to 40-inch cylinders, and it was given a most severe and comprehensive testing, over territory reaching from the Gulf States to Oregon and Washington.

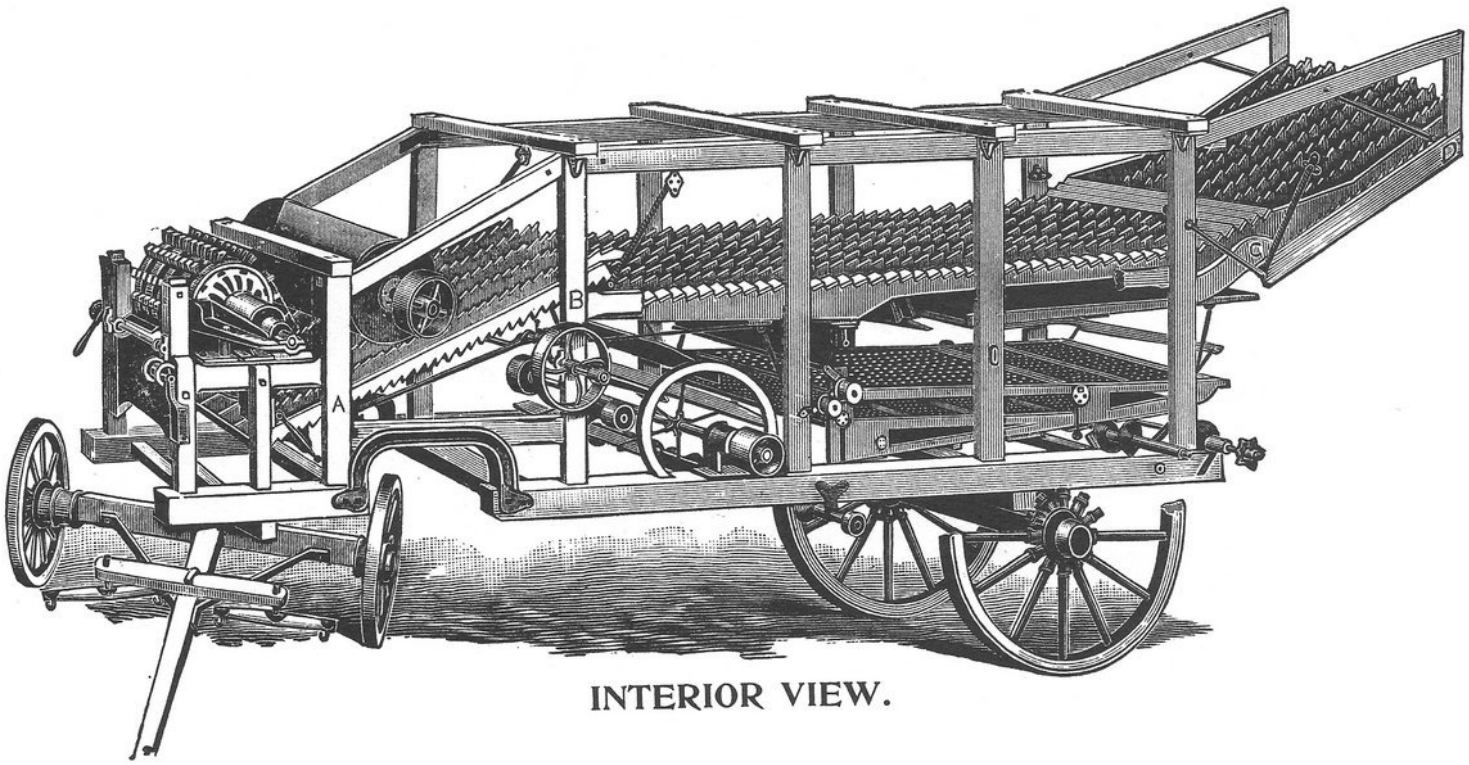
It gives us great pleasure to say to our patrons that the New Star has done the grandest work in separation and cleaning ever made by any machine. There has not been one complaint. No repairs were required in doing a season's threshing. The New Star was placed far ahead of any other thresher by every man who had the machine.

We believe that the common-sense advantages of our new system of separating and cleaning will impress themselves upon the conviction of all who will make a careful examination of our claims.



THE NEW STAR THRESHER—Right Side.

THE NEW STAR THRESHER.



INTERIOR VIEW.

THE points of superiority that may justly be claimed for the NEW STAR are, 1st, the thorough threshing out of all the grain; 2d, the saving of the grain without breaking; 3d, perfect separation; 4th, ease of running, and 5th, perfection of cleaning. We claim that it is the simplest and lightest draft thresher in the market, also that for capacity and perfection in separation and cleaning it is unequaled.

HOW THE THRESHING IS DONE.

The threshing is all done by the cylinder. The concaves simply hold the straw while the cylinder does the threshing. The concaves on the New Star are unlike those in common use both in construction and in the nicety with which **they may be adjusted to the varying requirements of special work.**

From two to four concaves with two rows of spikes each, or two spiked and two blank concaves, are generally used in grain threshing. The concaves rest upon eccentrics, and by means of a lever within easy reach, may be moved nearer to, or farther away from, the cylinder, so as to obtain the best results with the special job on hand. One extra concave, also three cylinder and two concave spikes, are furnished with each machine. Concaves with three rows of spikes are used in threshing the smaller seeds.

NO GRAIN IS BROKEN.

The non-breaking of grain is the result of having perfect cylinder and concaves. The spikes on both cylinder and concaves are made and finished **without any sharp edges or corners.** The cylinder **spike bars are round and smoothed.** The concaves have no sharp corners or edges for the grain to strike on, hence no breaking of grain.

Our cylinder is indeed a masterpiece of mechanism, powerfully made, and most accurately balanced and adjusted. When at its proper speed, about 1,100 revolutions per minute, its operation is almost noiseless. The steel of which our spikes are made is manufactured for that special purpose. It has double the tensile strength and far greater durability than any wrought iron or part iron spikes.

The steel bearings of the Star cylinder-shaft run in brass boxes which are supported in place by very solid frame work. The **perfect alignment of the bearings** is thus secured, the heating of boxes obviated, and the durability of these vital parts well assured.

SEPARATION.

In claiming that our device for separation is **simpler than any heretofore employed** we do not fear contradiction on the part of any disinterested person. This very simplicity might beget doubt, but the latter will, we think, **give way to admiration** when the ingenious working of these simple tables is well understood.

The separation is largely effected by the cylinder throwing the grain on the front table, which has an elevation of 21 degrees, consequently the flying grain is not thrown back into the machine, but stops at the beater, at a **distance of less than two feet** from the cylinder. The straw is carried up and backward on risers and to a point about one foot beyond where the grain is emptied on the second table. The grain is carried up and backward in buckets underneath the straw. As the grain is separated from the straw, commencing at the cylinder, it is not thrown into the straw.

There are three separating tables, The front from A to B, as shown on skeleton cut, the middle table from B to C, and the rear table from C to D.

The motion of all the tables is derived from a crank shaft at B. The varying motion to which they are subjected is due to the **throw given them by the rocking arms and hangers** by which they are supported.

In speaking of the motion of the tables, the middle and rear tables may be regarded as one, inasmuch as they are hinged together. Each of these tables is supported by a rocker at one end and a hanger at the other end. This method of support has been found to **neutralize, and completely do away with all tendency to unequal strains** which might result from gravity or other causes, if only one of these forms of support were employed.

The front table has a lateral movement of 3¾ inches, while the lateral movement of the rear table (from B to D) is 4½ inches. When in operation therefore the **travel of the rear table is thirteen feet per minute faster than that of the front table.**

The vertical range of motion of the two tables is as follows: 2½ inches at A; three inches at B (where the two tables meet); 4 inches at C, and five inches at D.

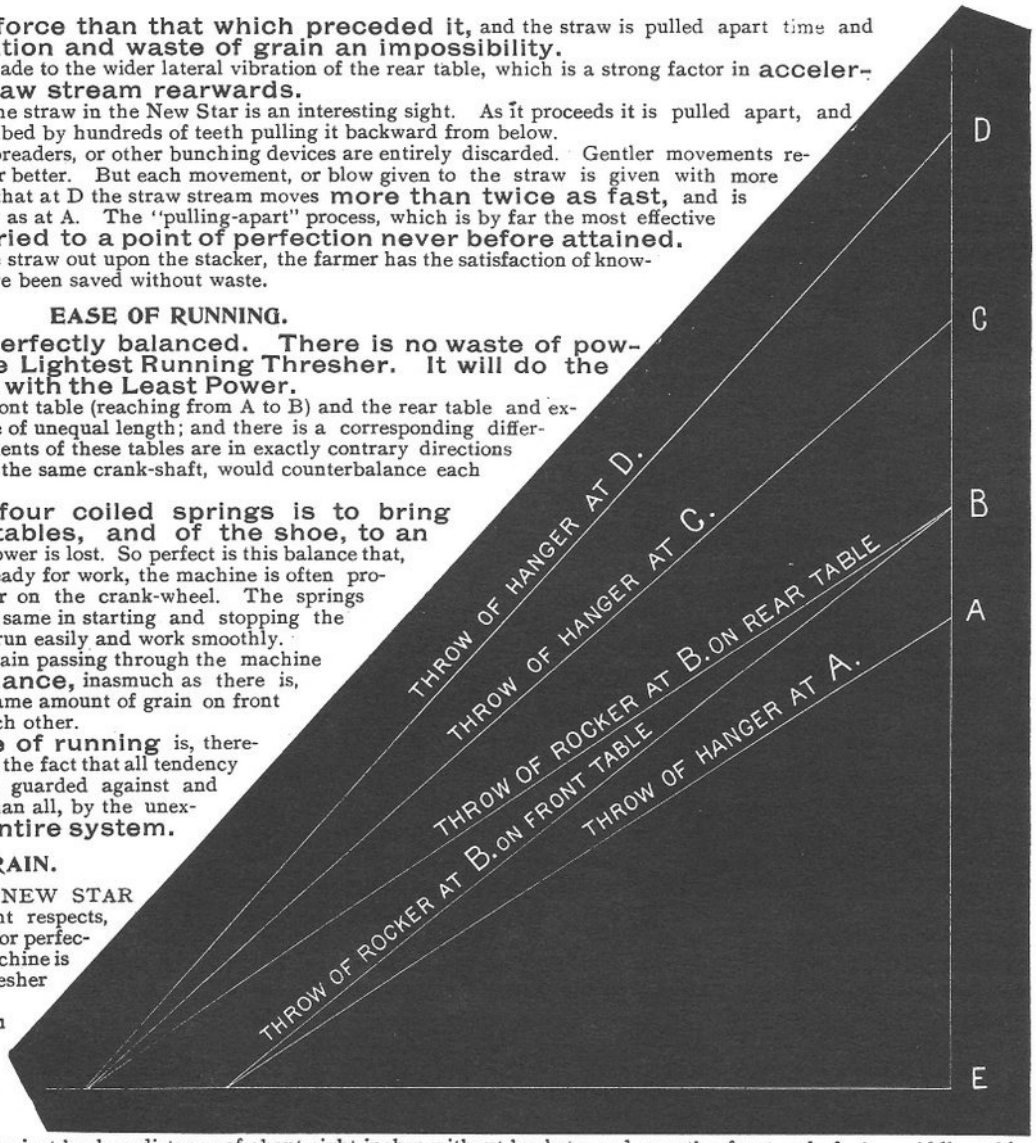
This continuously increasing motion, and propulsion of the straw from front to rear, insures at once the easiest and most perfect separation of the grain from the straw that has ever been accomplished by mechanical means. In the increasing distances of upward and backward throw from front to rear, there is more significance than might at first be apprehended. The diagram on the next page will illustrate. The throws from E (the lowest range of rockers and hangers) to A, B, C and D, (corresponding to parts of the machine so marked,) not only increase in range upward, as shown, but must all be made **in precisely the same time.** Owing to this fact the force of the throws **increases in a much greater ratio** than the distance. The lift of five inches given to the straw at D is **much more than twice as effective** as that of 2½ inches given the straw at A. Also the higher the throw, **the farther back is the new hold taken** on the straw from below for the next impulse. Thus each successive upward and backward throw, over the entire length of both

tables, is **given with more force than that which preceded it,** and the straw is pulled apart time and again, **rendering the retention and waste of grain an impossibility.**

Reference has already been made to the wider lateral vibration of the rear table, which is a strong factor in **accelerating the flow of the straw stream rearwards.**

The backward movement of the straw in the New Star is an interesting sight. As it proceeds it is pulled apart, and spread, and thinned out, as if combed by hundreds of teeth pulling it backward from below.

All hooks, prongs, pushers, spreaders, or other bunching devices are entirely discarded. Gentler movements requiring little power do the work far better. But each movement, or blow given to the straw is given with more force than the one preceding, so that at D the straw stream moves **more than twice as fast,** and is **more than twice as thin** as at A. The "pulling-apart" process, which is by far the most effective method of separation, is here **carried to a point of perfection never before attained.** And when the New Star tosses the straw out upon the stacker, the farmer has the satisfaction of knowing that the fruits of his labor have been saved without waste.



EASE OF RUNNING.

All movements are perfectly balanced. There is no waste of power. The New Star is the Lightest Running Thresher. It will do the Most and the Best Work with the Least Power.

It will be observed that the front table (reaching from A to B) and the rear table and extension (reaching from B to D) are of unequal length; and there is a corresponding difference in their weight. The movements of these tables are in exactly contrary directions and these, being transmitted from the same crank-shaft, would counterbalance each other, if the tables weighed alike.

The function of the four coiled springs is to bring the motions of the two tables, and of the shoe, to an exact balance, so that no power is lost. So perfect is this balance that, with the separating parts belted ready for work, the machine is often propelled by the pressure of one finger on the crank-wheel. The springs take off all the jar, cushioning the same in starting and stopping the table and causing the machine to run easily and work smoothly.

The weight of the threshed grain passing through the machine **has no effect on the balance,** inasmuch as there is, while in practical operation, the same amount of grain on front and rear tables, which balance each other.

The **unparalleled ease of running** is, therefore, due to our perfect balance, to the fact that all tendency to wasteful inequalities is well guarded against and cushioned by springs, and more than all, by the unexampled **simplicity of our entire system.**

CLEANING THE GRAIN.

The devices employed on the NEW STAR for cleaning are, in some important respects, unique, and are most effective. For perfection of work in this respect our machine is unapproached by any other thresher whatsoever.

The bulk of the threshed grain passes back in the buckets of the front table. These drop their contents through the slats of the rear table down upon the front return board.

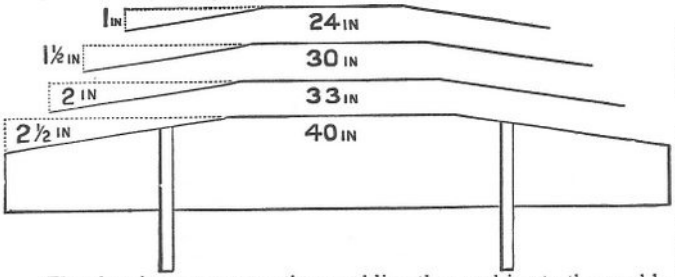
The risers on the front table project back, a distance of about eight inches without buckets, and over the front end of the middle table. The straw stream, therefore, is carried over, and past the descending threshed grain, **and in no wise interferes with, or is mixed up with it.**

All the grain from all the three tables flows swiftly and uninterruptedly over sloping return-boards to a point near the center of the middle table, where it falls down upon the front end of the riddles, where screen and fan-blast fit it for market.

The blast is divided, making both an under and over blast. **The strongest volume of blast is in the middle of the machine.**

The inability of the larger threshers to clean well is generally known. The larger the machine the more apparent this defect. From the fact that the wind must be introduced at the sides of the machine, it is mostly used at the ends of the fans. Consequently, the strongest part of the blast is at the sides of the machine, while it **should be strongest in the center,** where much the larger quantity of grain and chaff is deposited on the riddles. All machine men know that the cylinder spikes wear much faster in the center of the cylinder than at the ends. This shows where the largest amount of grain and chaff go on the riddles. If thresher-men put enough blast on, with the common styles of fans, to clean well, they are sure to blow out much grain at the sides of the machine.

With our new fan we direct as much blast to the center of the riddles, and as little to **the sides, as may be required to do perfect cleaning.** The following diagram illustrates the principle:



The ends of the **fan wings are graded, or beveled on their outer edges,** so that the proper strength may be given to the blast **at the center** as well as at the sides. It is, as it should be, **strongest at the center, where the most grain is deposited.**

If the fan-wheel is 24 inches in diameter, and the fans are beveled two inches at their outer ends, then the wheel is six feet in circumference at the center, and five feet in circumference at the ends. At a speed, say, of 700 revolutions per minute, the periphery speed of the fans will be 3,500 feet per minute at the ends, and 4,200 feet per minute at the middle. With an understanding of the style of our new fan, the reasons of the superior and perfect cleaning done by the New Star are made apparent to everyone.

The shoe is very roomy, thus enabling the machine to thoroughly clean the very large amount of grain which the New Star is capable of handling. The shoe is framed of hard wood instead of the flimsy construction of light boards which is sometimes seen.

In regard to the capacity of the New Star, we can give the confident assurance that **both thresher-man and farmer will be entirely satisfied.** It will separate and clean in the most perfect manner all the grain that any set of hands will care to feed into it. No thresher is made which is able to turn out larger or better work. With the New Star we can supply an excellent Bagger to those who desire such an attachment. We also manufacture the best Automatic Stacker in the market; also Clover Attachments, Wagon Loaders and Weighers. We call attention to the peculiarities of these special appurtenances on other pages of this catalogue.

Inasmuch as the New Star is the newest thresher, and presents a new system of separation and cleaning, the superiority of which **is certain to compel recognition,** it is proper to add that its peculiar features are protected by letters patent.

HOW THE NEW STAR IS FURNISHED.

We build the New Star in five sizes, as follows:
24-inch Cylinder, 36-inch Rear—Geared or Belted.
30-inch Cylinder, 42-inch Rear—Geared or Belted.
33-inch Cylinder, 52-inch Rear—Belted.
36-inch Cylinder, 56-inch Rear—Belted.
40-inch Cylinder, 60-inch Rear—Belted.

With every thresher sold at list prices will be included a truck, folding stacker, neck-yoke, whiffletrees, stay-chain, etc., including brakes for trucks, side canvasses, windlass and rope for stacker, and grain register. For the "geared" machine extra pinions will be furnished for the side gear. With either "belted" or "geared" machine we furnish our combination riddles for cleaning wheat, oats, barley and rye, all necessary belts, feed-tables, foot-board, run-boards, band-cutter's stand, oil can, wrenches, three cylinder and two concave teeth extra, one extra concave, spike wrench and spike straightener.

If truck wagon is not wanted, or if folding stacker is not wanted, a proportionate reduction is made.

Automatic stackers, clover attachments, baggers, wagon loaders and grain weighers are extra, and are sent only when specially included in the order.

Purchasers of complete steam rigs are furnished with the requisite amount of main drive belts for operating the same.

Every purchaser of a rig, or of either one of our machines, gets the broad and ample warranty of C. Aultman & Co.

HOW THE NEW STAR IS MOUNTED.

The general features characteristic of the New Star are great strength, unusual simplicity and extraordinary capacity.

The frame work is very strong, assuring the durability of the working parts.

The wagon or truck is built o. selected hickory and oak, and is well ironed. The wheels are wide and heavily tired. In rainless districts iron wheels are preferred. We can furnish iron wheels adding the increased cost to the price of the machine.

On the Star the arrangement for the convenience of the thresherman are very complete. The machine is well covered by a deck from end to end. Ample protection is furnished, so that work need not be interrupted by adverse winds. The sills are arched, permitting short turns. All bearings are well protected, and are also easily accessible for oiling.

POWER REQUIRED.

To get the best results we recommend that our 24-inch thresher be run with eight or ten horses. Our 6-horse engines furnish the required power. With the 30-inch machine it is best to have twelve horses, or a 10-horse engine. With our 33-inch cylinder use a 10 or 12-horse power engine. With our 36-inch cylinder it is best to have a 12-horse power engine. Our 40-inch cylinder should not be operated by an engine of less than 16-horse power.

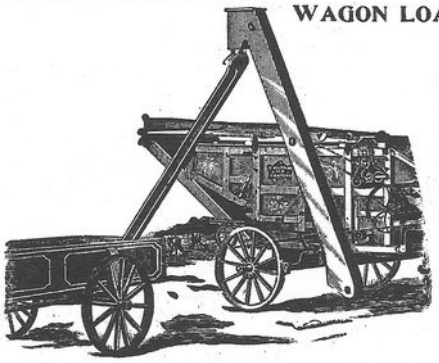
SCOPE OF PRODUCT.

Our line of threshers, steam powers, and all the appurtenances of the business, is by far the most complete produced by any house in America. We have adapted our machinery to the varied needs of divers regions, so that our agents do not have to depend on other houses in order to be able to furnish the completest outfits the world can produce.

C. Aultman & Co. confine their product of threshers strictly to highest class machines of large capacity.

With the year 1893 the house enters on its sixty-third year. It has always been characteristic of this house to use only the best materials, and to equip their machines with the most effective devices which, after exhaustive testing, have the approval of experienced thresher builders of the highest repute.

WAGON LOADER.



This cut illustrates our Wagon Elevator so clearly that little explanation is necessary. The elevator is suspended at its middle upon an axle which rests upon the frame of the thresher.

When in operation the discharge spout, being attached to upper end of elevator, carries the cleaned grain into a wagon. The spout is attached to elevator by a swivel joint, and can, therefore, discharge its grain on either side of the thresher.

When a job is finished the elevator turns on its axle, and, with its spout, is folded against the side of the thresher. It is handled without any inconvenienee, and does its work perfectly. It is an extra attachment.

STRIKING CONTRAST.

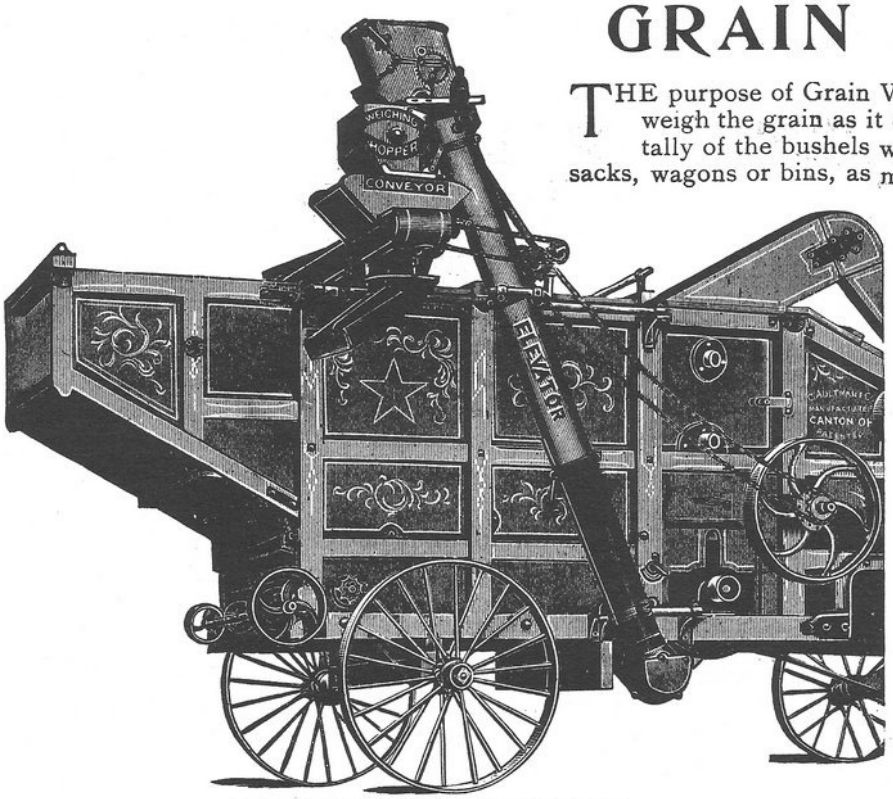
The picture at the left illustrates the primitive Hebrew and Egyptian mode of threshing. The daily product of this outfit could amount to nothing more than a few bushels of grain mingled with many times its bulk of very dirty dirt. Between this and the thousands of bushels of clean grain that are poured out of the New Star Thresher what a contrast?

The fact that C. Aultman & Co. are annually required to furnish their Wagon Loaders in large numbers is a significant indication of the enormous work the New Star is capable of handling.

We have referred to the cow team rig as a primitive mode. As a matter of fact our own agent took this photo last year in an Egyptian field, on the banks of the Nile. Our print is a photo-engraved copy. So it appears that some modern methods are also ancient methods.

GRAIN WEIGHERS.

THE purpose of Grain Weighing Attachments to threshers is to weigh the grain as it comes from the thresher, keep a correct tally of the bushels weighed, and deliver the grain directly into sacks, wagons or bins, as may be desired. C. Aultman & Co. are prepared to supply their patrons with either the Telescope Weigher or the Perfection Weigher. These weighers have been thoroughly tested and are well known to be the best made. Their operation requires but little expenditure of power.



TELESCOPE WEIGHER.

TELESCOPE WEIGHER.

The Telescope Grain Weigher consists of an Elevator, a Weighing Hopper and a Conveyor. The elevator lifts the grain to the hopper.

Attached to the hopper is a scale-beam with sliding weight, and a tally-box. The sliding weight is set at the desired point, and the weighing and tallying then proceed automatically.

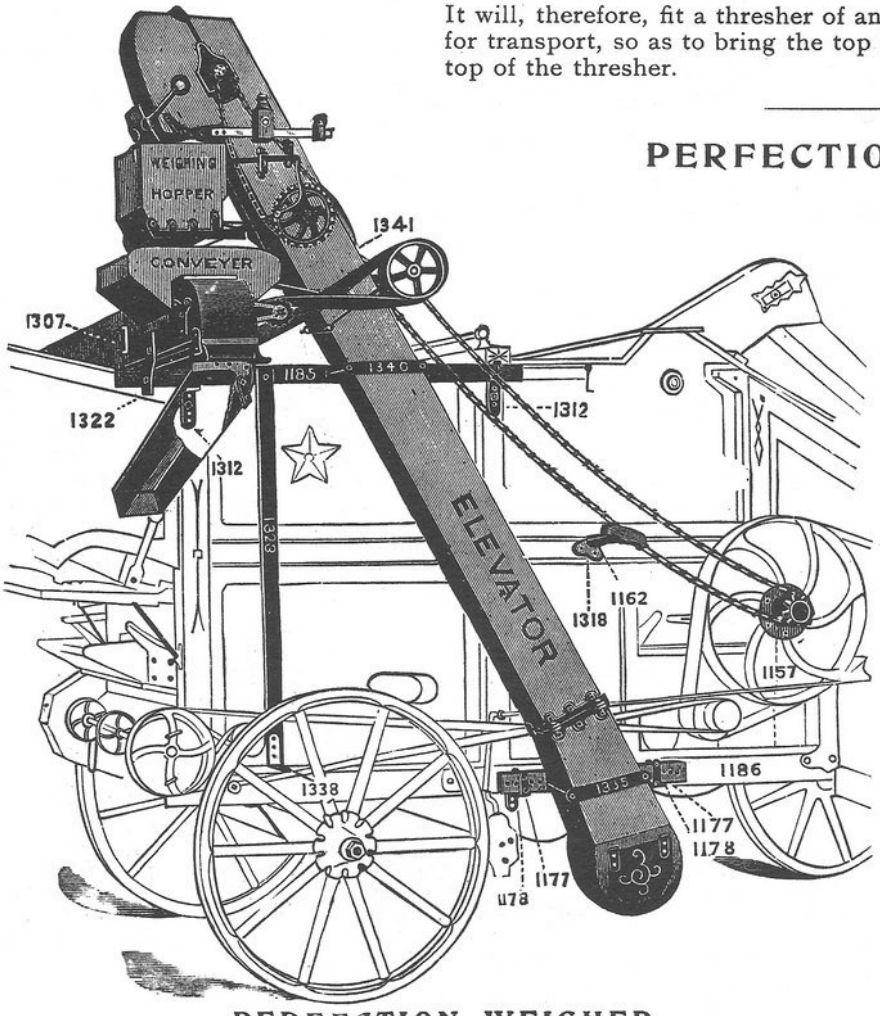
After being weighed, the grain is dumped into the conveyor, which rests horizontally across the deck of the thresher. The grain can be delivered from either side of the thresher.

The elevator is made of two steel tubes, one of which telescopes into the other. It will, therefore, fit a thresher of any height. The elevator can be telescoped for transport, so as to bring the top of the weigher nearly to a level with the top of the thresher.

PERFECTION WEIGHER.

The cut shows the manner in which the Perfection Weigher is adjusted to the Star Thresher. The general principle employed is the same as that used on the Telescope Weigher. Sprocket chain elevators carry the grain from the thresher to the hopper, where it is weighed. The weighing is recorded by the tally-box, and the grain is delivered on either side of the thresher through swinging spouts, which can be made longer or shorter, as may be desired.

The Perfection Elevator is provided with a removable section, by means of which it may be adjusted to threshers of different heights.

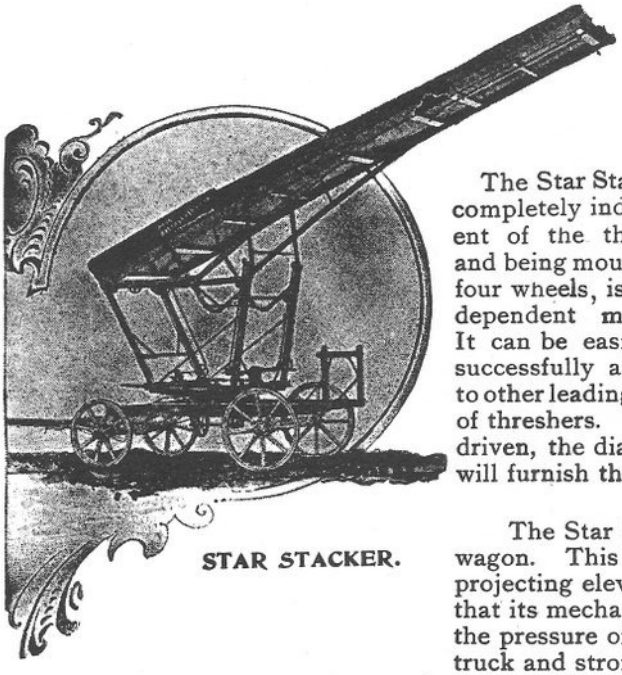


PERFECTION WEIGHER.

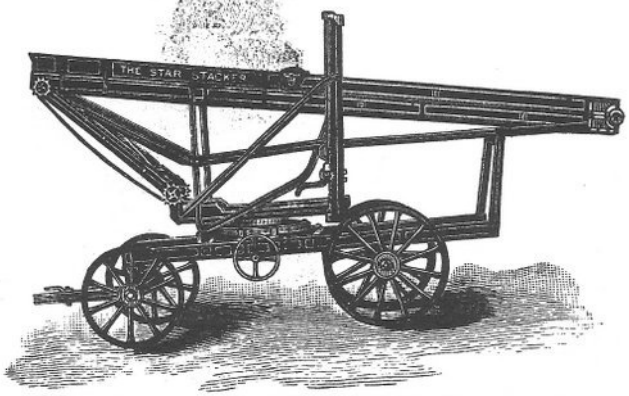
The employment of weighers is very satisfactory to threshermen, because they accurately and automatically measure every grain that is threshed. The farmer also realizes great advantage from the fact that the grain is kept clean, and there is no waste. It also saves him the board and wages of several men.

Directions for attaching weigher to machine accompany each attachment.

THE AUTOMATIC STAR STACKER.



STAR STACKER.



STRAW STACKER—FOLDED FOR TRANSPORT.

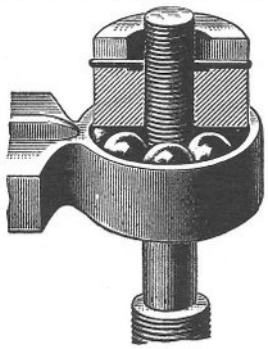
The Star Stacker is completely independent of the thresher, and being mounted on four wheels, is an independent machine. It can be easily and successfully attached to other leading makes of threshers. If we are informed from what part of separator it is to be driven, the diameter, speed and width of pulley, length of belt, etc., we will furnish the extra pulley and belting required.

The Star Stacker is always mounted on a good. strong, four wheeled wagon. This is a very important matter in a stacker, owing to its long projecting elevator, which must be firmly supported to its farthest end, so that its mechanism may work freely, and which must also be able to resist the pressure of high winds. We will ask the reader to compare our solid truck and strongly built wheels with those of any other stacker. He will find that the machine stands firm on the ground, is capable of handling any amount of straw, and has no need of the bracing, propping and long guy ropes that show up the weaknesses of other stackers.

This stacker is folded for transport, or unfolded for work with great ease. The elevating apparatus consists of two worm-gears so constructed that there is no chance for slipping or breaking of parts. All movements are true and positive, and there is no possible chance of twisting out of line or slipping a latch, as is the case with machines using latches and long supports which soon become racked, twisted and worn out. The Power-Lift completes this device by enabling the operator to raise or lower the elevator just where he wants it without any effort.

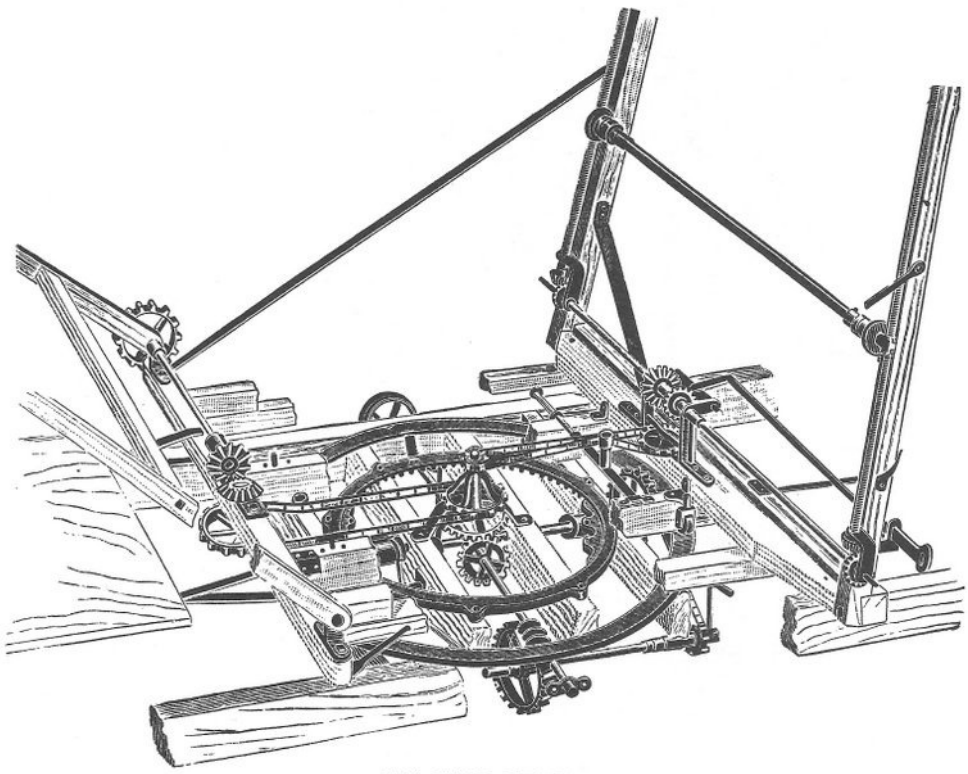
We call attention to the large supporting ring outside the gear-wheel. This wide and solid base insures steadiness in operation, and a durability which no other stacker can equal.

When in operation our stacker receives the straw at its lowest end, from the common stacker attached to the thresher, and elevates it as high as can be desired. It delivers the straw and chaff in the middle of the stack from bottom to top, and



BALL BEARINGS

Obviate friction in raising and lowering the elevator. A thing which largely contributes to the ease and convenience of handling, also to the durability of the machine, is to be found in the fact that the upright screws which carry the weight of the elevator, rest on ball bearings, same as are used on high priced bicycles, at their upper and supporting ends. This improvement also will be found on no other stacker. It illustrates how C. Aultman & Co. provide for the efficiency and durability of their machines in all their details.



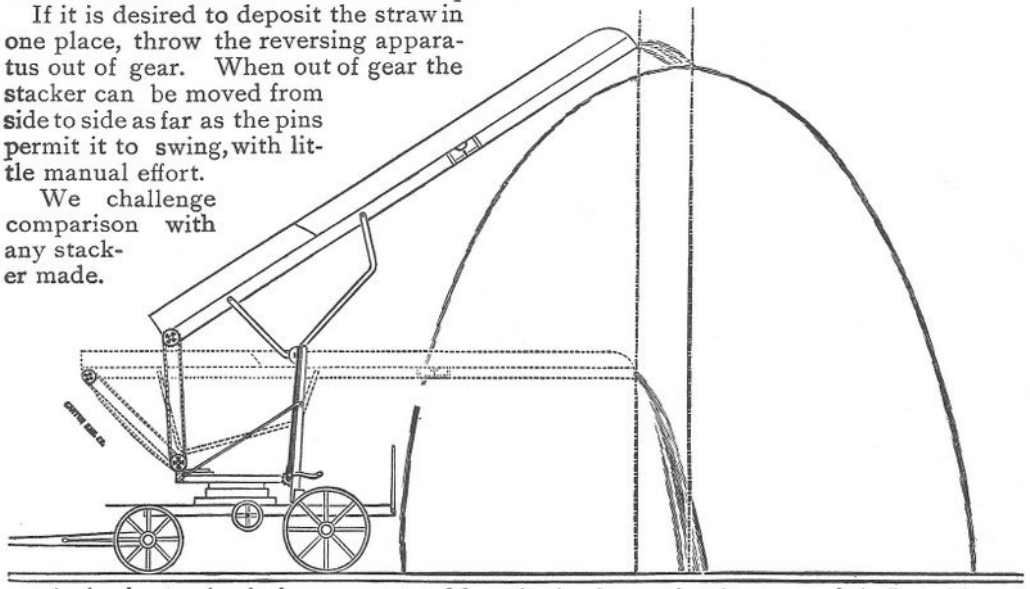
STACKER GEAR.

little or no manual help is needed to give the stack a perfect shape for the preservation of the straw. It does away with the dirtiest and hardest drudgery of threshing.

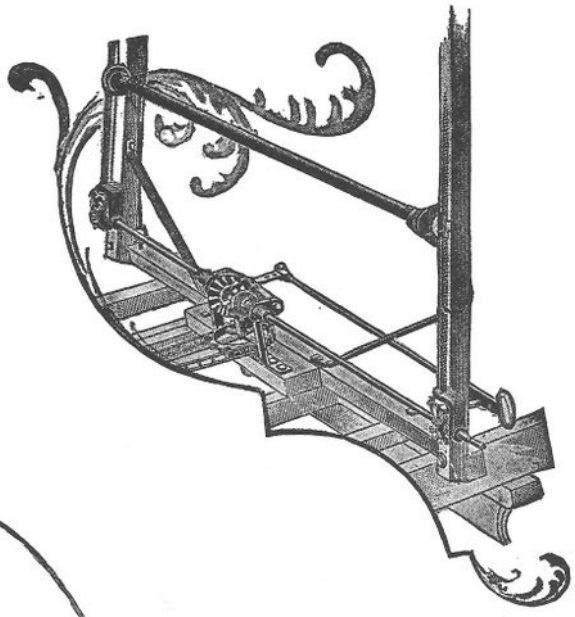
A worm-gear at the end of main shaft moves the stacker from side to side, describing an arc of nearly two-thirds of a circle, over which the straw may be deposited from any height desired. The motion of the stacker back and forth from end to end of the arc is automatic, and may be continuous, this movement being governed by right and left-hand clutches. These clutches are controlled by two reversing pins in the inner rim of the large center wheel. A number of holes are bored for these pins in the rim of the center wheel, and the lateral circuit to be described by the stacker is very easily regulated by changing the places of these two pins. The center or gear wheel has also two stationary pins, which prevent stacker from going beyond the limit of two-thirds of a circle in case the loose pins should be left out.

If it is desired to deposit the straw in one place, throw the reversing apparatus out of gear. When out of gear the stacker can be moved from side to side as far as the pins permit it to swing, with little manual effort.

We challenge comparison with any stacker made.



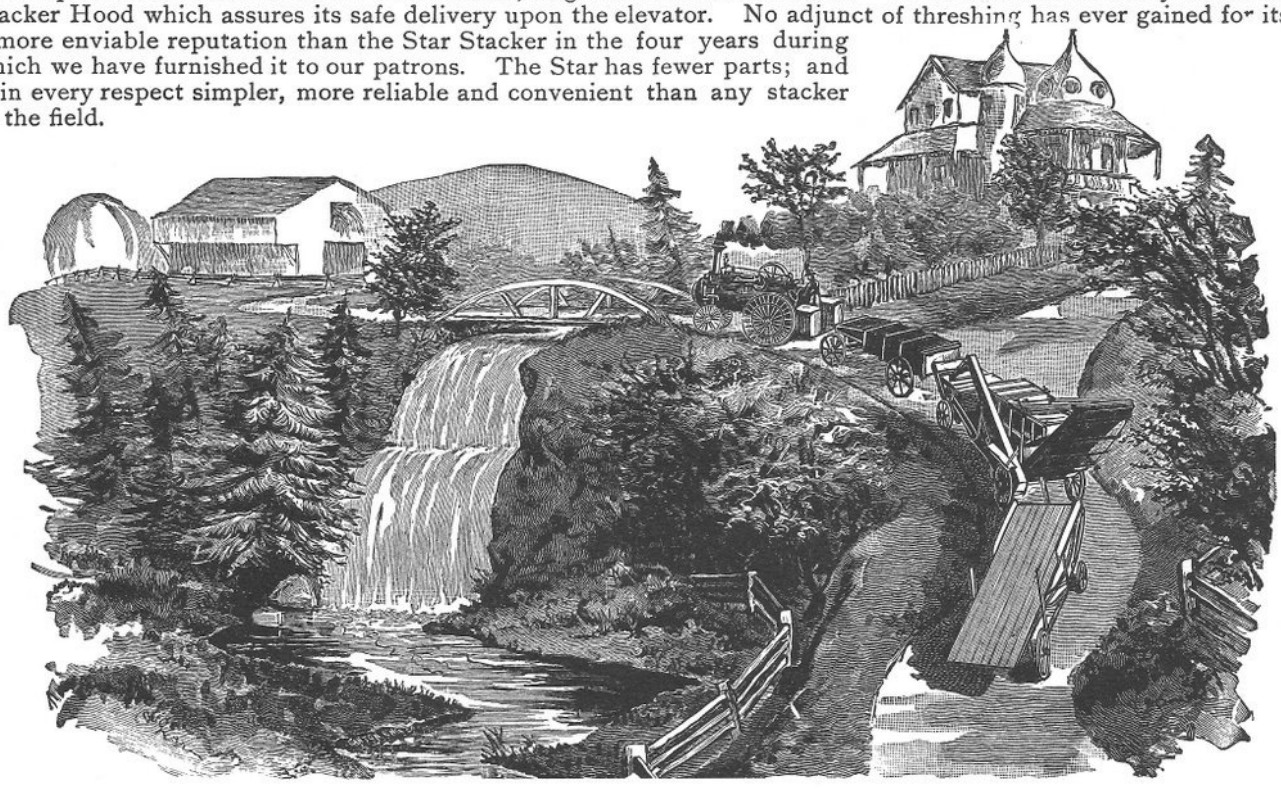
As the elevator rises it also moves outward from the thresher, so that the straw and chaff are delivered on the center line and middle of the stack from bottom to top.



OUR POWER LIFT

Enables the operator to raise and lower the elevator by steam power, simply by throwing a hand-crank and engaging one or the other of the bevel pinions on the elevator shaft. The lever controlling the pinion gear shown at the right, is within convenient reach of the operator.

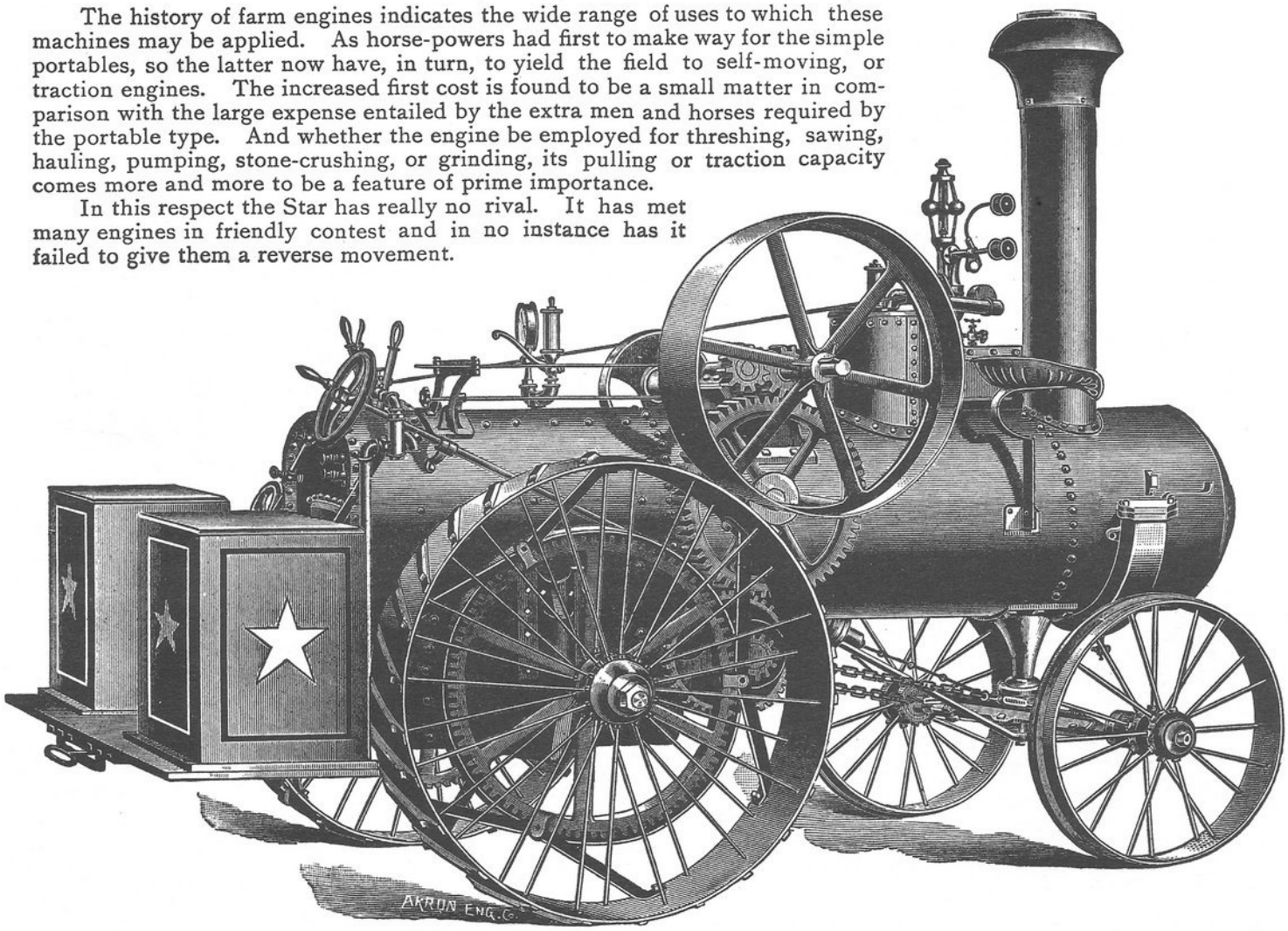
STACKER HOOD.—If unprotected in windy weather, the straw in its fall from the top of the common stacker down upon the bottom end of the Star Stacker, might be blown to one side. To obviate this difficulty we furnish a Stacker Hood which assures its safe delivery upon the elevator. No adjunct of threshing has ever gained for itself a more enviable reputation than the Star Stacker in the four years during which we have furnished it to our patrons. The Star has fewer parts; and is in every respect simpler, more reliable and convenient than any stacker in the field.



STAR OUTFIT ON THE ROAD.

The history of farm engines indicates the wide range of uses to which these machines may be applied. As horse-powers had first to make way for the simple portables, so the latter now have, in turn, to yield the field to self-moving, or traction engines. The increased first cost is found to be a small matter in comparison with the large expense entailed by the extra men and horses required by the portable type. And whether the engine be employed for threshing, sawing, hauling, pumping, stone-crushing, or grinding, its pulling or traction capacity comes more and more to be a feature of prime importance.

In this respect the Star has really no rival. It has met many engines in friendly contest and in no instance has it failed to give them a reverse movement.



THE STAR ENGINE—RIGHT SIDE.

C. AULTMAN & CO. manufacture three distinct types of road engines, each one of which is characterized by certain features which give it superior advantages for the accomplishment of its task under such special conditions as are presented in diverse territories. These engines are styled, respectively, "The Star," "The Monitor," and "The Phœnix."

The Star Engine is a general favorite where straw fuel is not employed. The Monitor, however, possesses capabilities for hilly and mountainous regions which are necessarily beyond the scope of any horizontal engine whatsoever. The characterizing peculiarity of the Phœnix Engine is its adaptation to the use of straw as fuel.

The economic advantages to our house of making a smaller variety of engines would be very considerable, but our customers, in the different regions where our engines have been introduced, will not hear to any such proposition; and, inasmuch as the sales of all three engines keep on increasing from year to year, neither one showing any diminution, we can do no less than accept the plain teaching of experience, and will continue to furnish the engines as demanded.

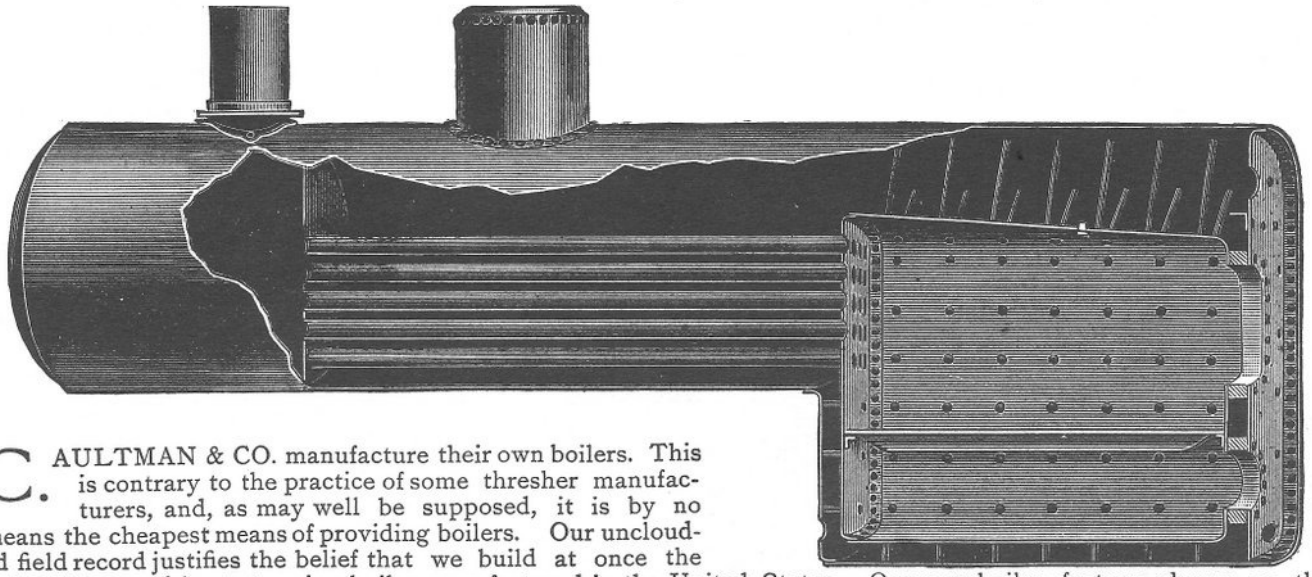
Of all the machines built for uses in agriculture there is not one in which excellence of material and thorough construction is of more vital importance than in the steam engine. Simplicity of design, absence of complication, safety, reliability and convenience, may all be regarded as absolute indispensabilities. These are facts which have had a controlling influence upon the character of all the products furnished to the market from the engine shops of C. AULTMAN & CO.

In regard to steam plowing, we will say that, while the Star Engine is not placed on the market as a plowing engine, the house has frequently been in receipt of advices stating that the engine has been successfully employed in that way. The extraordinary capacity of the engine as a puller gives it peculiar advantages for this class of heavy work.

Parties wishing plowing engines are invited to correspond with us. We do not make plows, but will promptly respond to inquiries, indicating to our customers the proper steps to take in order to obtain a plowing outfit.

We now ask the reader's attention to our descriptions and illustrations of these engines, feeling sure that, if in want of a machine, he will find one or the other of these engines possessed of equipments for his special work, such as he will seek for elsewhere in vain.

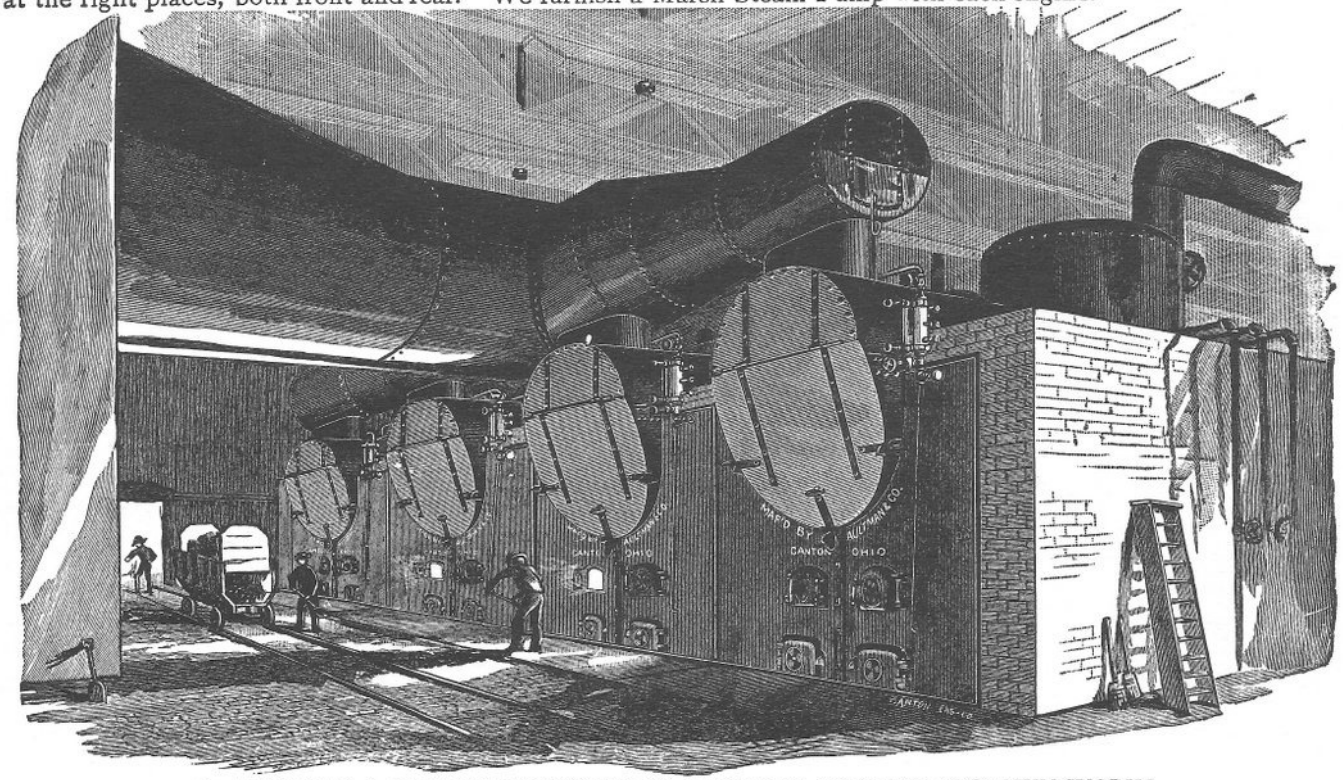
THE STAR BOILER.



C. AULTMAN & CO. manufacture their own boilers. This is contrary to the practice of some thresher manufacturers, and, as may well be supposed, it is by no means the cheapest means of providing boilers. Our uncloudED field record justifies the belief that we build at once the safest, best, and best steaming boiler manufactured in the United States. Our new boiler factory, shown on the extreme left of the cut on page 24, is the largest and best equipped in this country.

Our boiler shells are made of the best boiler steel. Their guaranteed tensile strength is 60,000 pounds per square inch. Their longitudinal seams are double-riveted. The crown-sheet dips down and backward, thus assuring its being covered with water in descending hills. No expense has been spared, and no precaution omitted, to insure the perfect safety, economy and efficiency of the Star Engine.

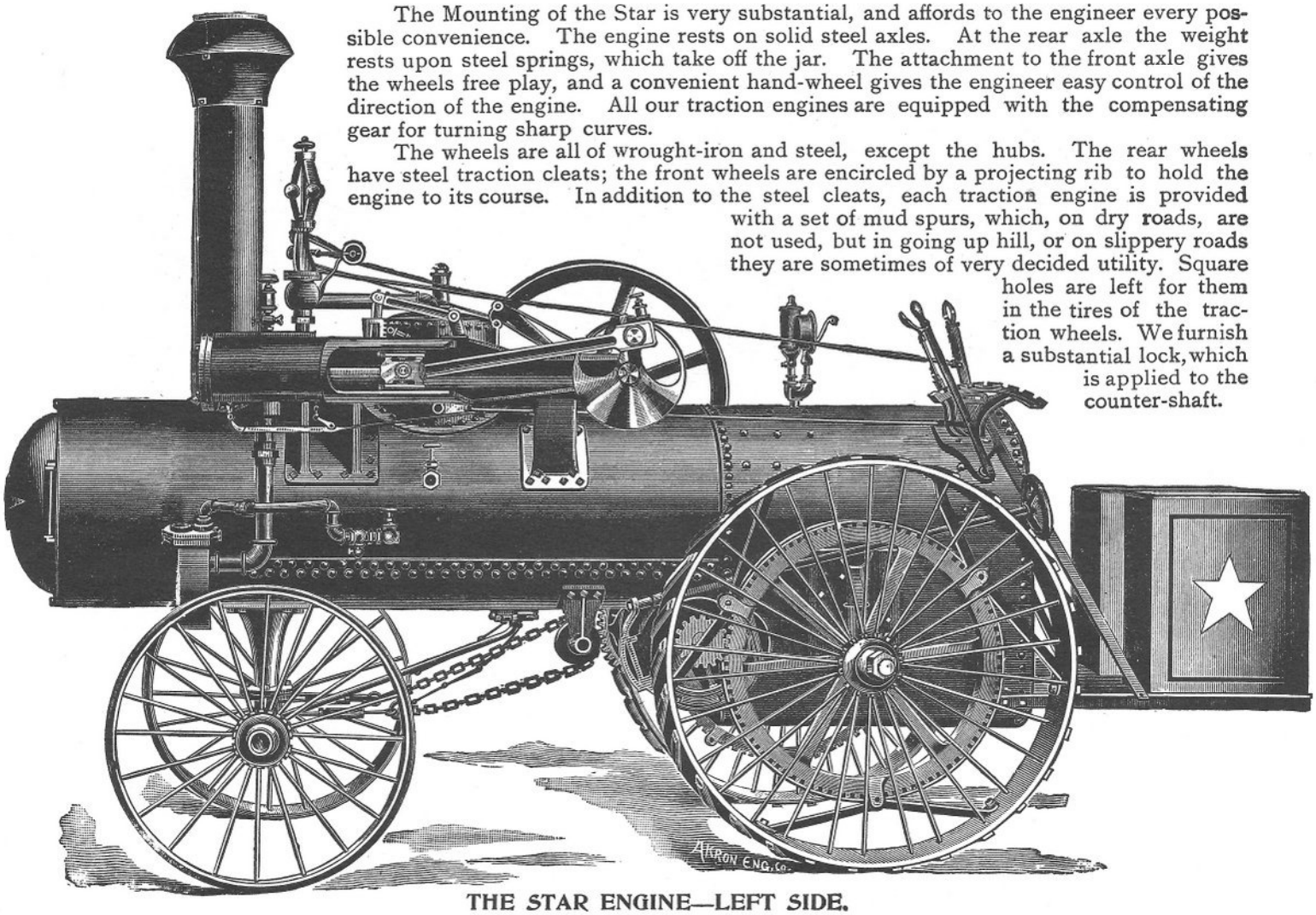
The fire-box is entirely surrounded by water—top, bottom, and four sides. A fusible plug in the crown-sheet guarantees safety in a case of extreme carelessness. All parts of the fire-box are strengthened by stay-bolts screwed into inner and outer shell, and well riveted. Doors give convenient access to boiler at both ends for coaling, cleaning, etc. The dome is capacious and high, insuring dry steam. The smoke-stack, made of very heavy sheet-iron, rests on a cast-iron base. It will be seen by our illustrations that the Star boiler shell is extended some distance in front of the smoke-stack. This extension of the outer shell past the flues and water-space permits the use of a most convenient and efficient spark-arrester. A large door opens into the smoke-chamber thus formed. The hinged spark-screen can be opened while fire is being started, then closed when steam draft becomes sufficient. Aside from its convenience and efficiency, this new improvement makes the Star the safest of road engines. The heater brings the water well up to the boiling point before entering the boiler. This engine is provided with an injector, as well as pump, for supplying the boiler with water. The flues are of standard extra heavy gauge, and lap-welded. Both ends of the flues are solidly beaded against the boiler-heads, front and rear. Hand-holes for cleaning will be found at the right places, both front and rear. We furnish a Marsh Steam Pump with each engine.



C. AULTMAN & CO.'S FACTORY BOILER BATTERY—BUILT IN OUR OWN WORKS.

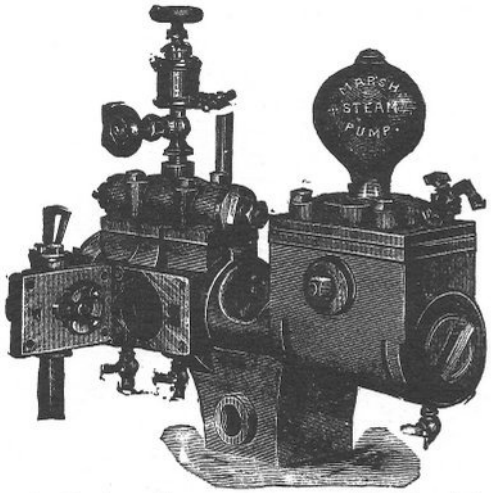
The Mounting of the Star is very substantial, and affords to the engineer every possible convenience. The engine rests on solid steel axles. At the rear axle the weight rests upon steel springs, which take off the jar. The attachment to the front axle gives the wheels free play, and a convenient hand-wheel gives the engineer easy control of the direction of the engine. All our traction engines are equipped with the compensating gear for turning sharp curves.

The wheels are all of wrought-iron and steel, except the hubs. The rear wheels have steel traction cleats; the front wheels are encircled by a projecting rib to hold the engine to its course. In addition to the steel cleats, each traction engine is provided with a set of mud spurs, which, on dry roads, are not used, but in going up hill, or on slippery roads they are sometimes of very decided utility. Square holes are left for them in the tires of the traction wheels. We furnish a substantial lock, which is applied to the counter-shaft.



THE STAR ENGINE—LEFT SIDE.

MARSH STEAM PUMP.



Our Engines will continue to be supplied with a first-class Injector. Instead of the Excentric Pump furnished heretofore, we shall hereafter furnish with each engine a *Marsh Steam Pump*. We have adopted this pump for use on our Traction Engines after a comparative testing of all the pumps available for such engines that have come to our notice. The Marsh Pump is known to be the best engine pump made, and can be guaranteed as such.

It regulates itself automatically. It has no dead center, and will always start when steam is admitted. It exhausts into, and warms the water before the latter passes through the heater. Every part is made of the best material, and is interchangeable. Its length is 12 inches and its weight a little over 20 pounds.

The maximum capacity of this pump exceeds 200 gallons per hour, but it can be graded to supply any lesser quantity. It has few parts, is easily accessible, and is the simplest, surest and most durable steam engine pump made.

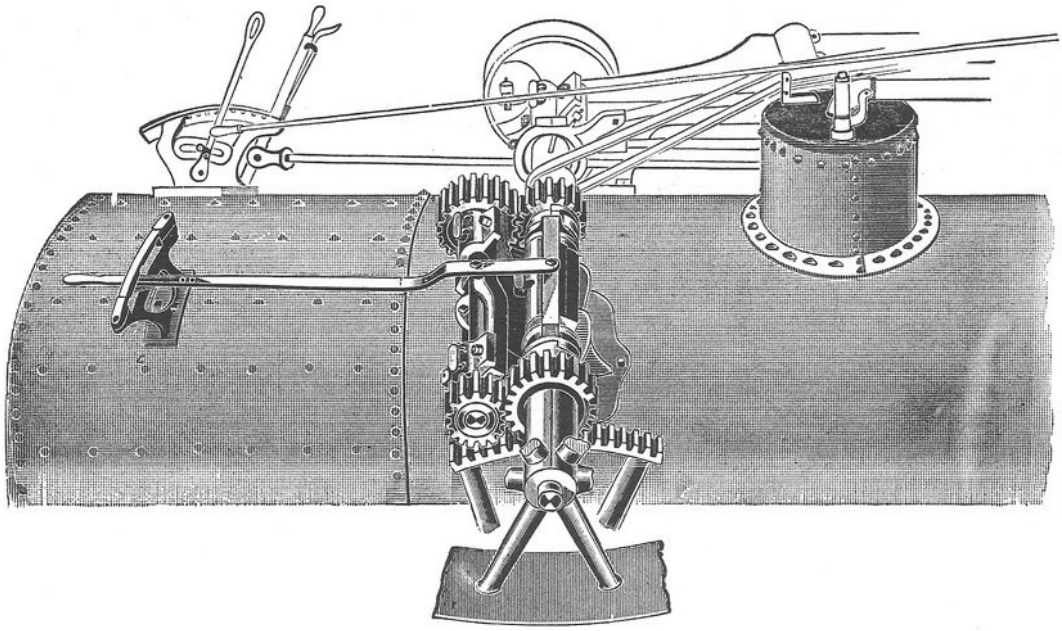
We sell the Star with water and fuel boxes mounted on rear platform, as shown in the cuts. The platform rests on springs, which greatly promote the comfort of the engineer. With our traction engines we also furnish tongues, neck-yokes and whiffle-trees for convenience in handling when engine is not fired up.

STAR ENGINE—DESCRIPTION.

We shall only make mention of those features on the Star which are common to most engines, but will endeavor briefly, but plainly, to explain those points of superiority which characterize only the Star.

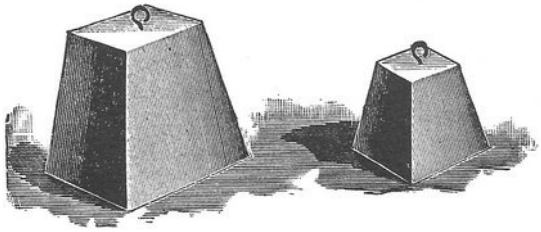
The Star Engine is always in the easy control of the engineer, who stands upon the platform in the rear. He has, at his right hand, the hand-wheel for the manipulation of the steering apparatus. Within easy reach also are levers giving control of the reverse link, the brake, the throttle, the draining of cylinder and steam chest, the blower, the injector, etc. In short, nothing that could contribute to efficiency in operation, convenience in handling, durability in wear, and economy in running expenses, has been omitted.

The cylinder, steam chest, slides, and half of the crank box are all cast in one piece. All of our engines are made in that way. This saves packing and never requires repairing. All working parts are of the best steel. Our automatic oilers for cylinder are an improvement on all previous methods for oiling those important bearings. The cylinder rings are self-adjusting. All parts are carefully counter-balanced, so that there is no waste of power or lost motion. The best form of cocks and valves for the drainage and feed of the engine are used; also, a first-class governor. We furnish the Pickering Governor, which has no equal for Traction Engine uses.



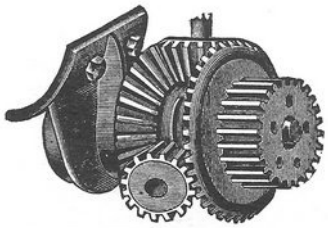
TWO-SPEED GEARS.

A device of great utility on the Star is Two-Speed Gears. The propelling gears of the Star Engine have two different speeds. The ordinary speed will carry the engine over level roads at the rate of three or four miles an hour. When greater power is needed, as in ascending a hill, or by the condition of a heavier road, this power is obtained by slowing up the motion of the traction wheels 50 per cent. or two to one. Two pinions revolving on the drive-shaft are controlled by a clutch and lever. One of the pinions transmits the ordinary road speed, and the other, smaller pinion, half the ordinary speed. If a hill is to be ascended, the driver has only to use the lever, which is in easy reach, and engage the smaller instead of the larger pinion. He will thus easily double the strength of the engine, enabling it to exert twice the power of common engines of the same rated power.

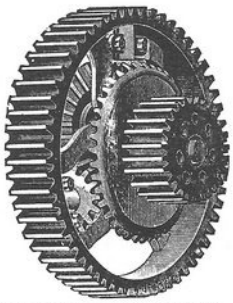


The two weights in the cut show, approximately, the proportion in which the tractile power of the Star Engine is increased, or diminished by the help of the two-speed gear. If the small weight represents the tractile power of the engine at ordinary speed, by throwing the gear clutch this pulling power is instantly augmented to the degree proportionately shown by the larger cut.

PLACE OF BEVEL PINIONS.



BEVEL GEAR, one revolving, the other keyed to shaft.



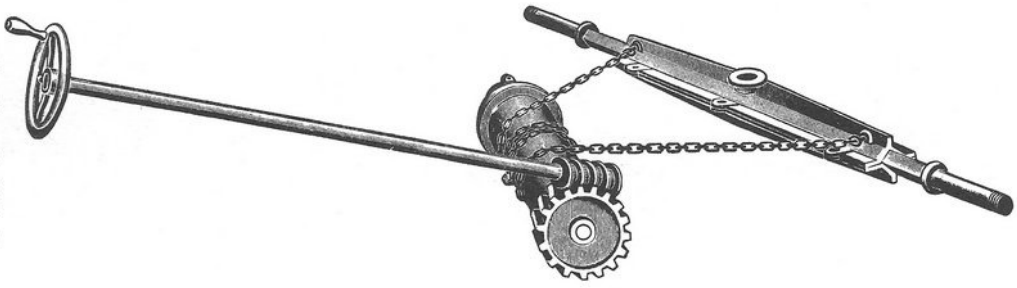
JACK-IN-THE-BOX GEAR COMPLETE.

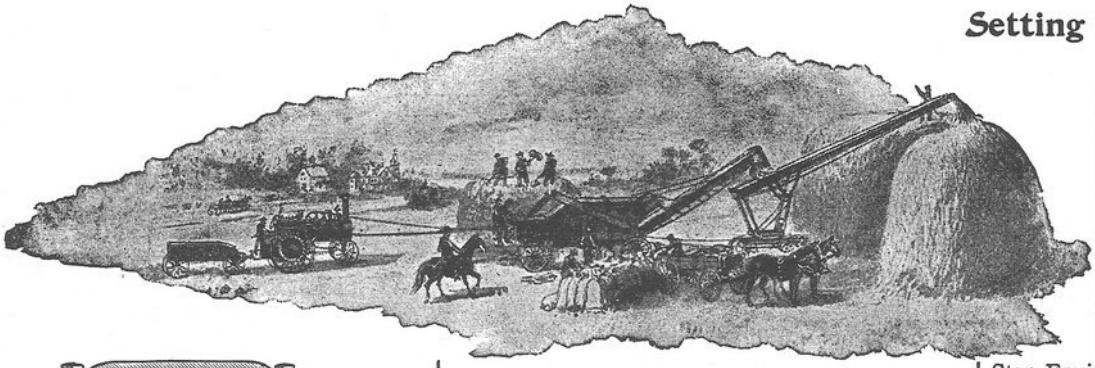
COMPENSATNG GEAR.

Our Jack-in-the-Box, or compensating gear, is an indispensable aid in moving and handling the engine. It comes into play at every moment when the course of the engine is deflected from a straight line, so that in turning at any desired angle the wheel that makes the longest curve not only moves independently of the other wheel, but the whole force of the engine is applied in propelling both wheels of the machine just as much when the wheels move at different speeds, while turning, as when the wheels move at the same speed. Thus the convenience of the Star in handling, pulling and setting becomes a valuable feature of the first importance on all the Traction Engines furnished by C. Aultman & Co.

STEERING DEVICE.

The hand-wheel shown in the cut is conveniently near the operator's right hand as he stands on the engine platform. He has perfect control of the direction of the engine. The projecting rib on the front wheels holds the engine to its course.

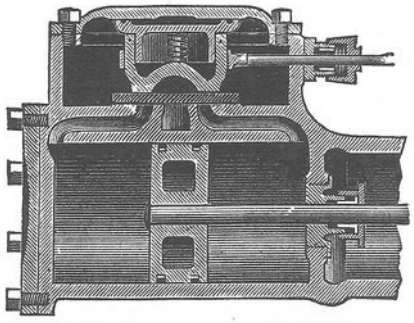




Setting Engine for Work.

There are three notches for the speed lever above referred to. The left-hand notch gives the fast speed, and the right-hand notch the slow speed. To set the engine for threshing, place the lever in middle notch. This is all that is required.

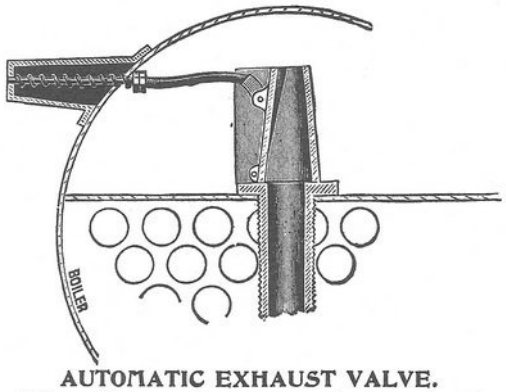
In the cursory perusal of this description, we trust the reader has not failed to observe the points of very superior merit possessed by the Star Engine. The experienced steam user cannot fail to have noted that our steam valve, our exhaust valve and the two-speed gears, afford him advantages which are absent on all other engines.



OUR BALANCED VALVE.

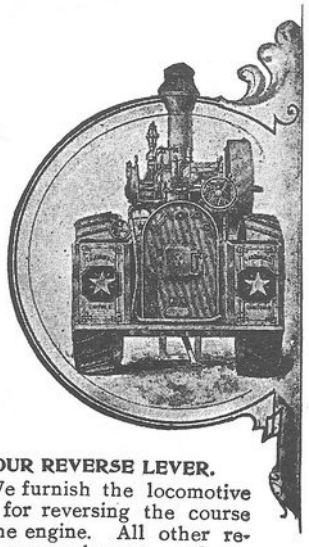
The merits of our Balanced Valve have exacted the hearty endorsement of the most distinguished steam experts. This result is partially due to our automatic exhaust, to which reference will presently be made. The valve-rod of the Balanced Valve is attached to a wrought iron yoke passing clear around the valve, which insures its free and easy movement. The lap of the valve is so adjusted that the expansive power of the steam is utilized to its fullest extent. The pressure of the steam in the steam chest against the valve—and consequently against the valve-seat—is thus balanced, and is reduced to its minimum by means of a riding brass ring.

The grand result of this arrangement is that there is but little pressure on the valve, no perceptible friction or wear upon the valve or the valve-seat, and a very great saving of steam, a saving of power, a saving of fuel, and of running expenses and repair bills. The cost for fuel and operating is reduced to the minimum, while the effective power is brought to the maximum. Our arrangement is such as to secure the nearest approach to full-boiler pressure in the cylinder ever obtained on an engine.



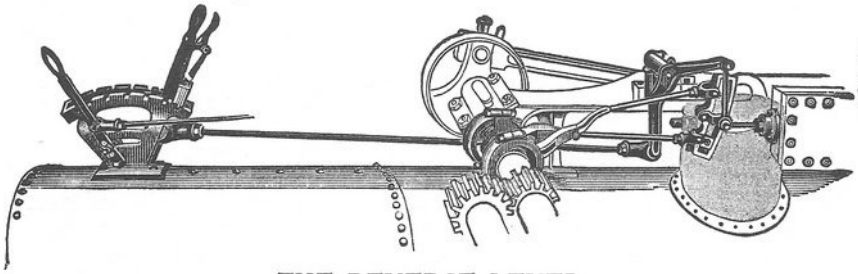
AUTOMATIC EXHAUST VALVE.

We call attention to our Automatic Exhaust Valve. Back pressure, which on other engines at times becomes very heavy, causing a very hurtful waste of power just when the most power is needed, is avoided on our engines by our automatic exhaust valve, a device that can be found on no other engine. The exhaust-pipe nozzle of other engines is an opening of fixed size adapted to the ordinary escape of steam. When an extraordinary amount of steam has to be used, as in drawing a heavy load, or going up steep hills, their draft is intensified, so that it is not unusual to see live coals drawn through the flues and hurled out of the smoke-stack by the velocity of the escaping steam. At such times there is necessarily great back pressure. With our automatic nozzle, or valve, there is no more fire-draft at such times than in ordinary working. It adjusts itself to the volume of steam escaping from the cylinder. The greater the volume of escaping steam, the larger the opening becomes, thus effectively obviating back pressure. This advantage needs only to be stated to commend itself to everyone who has any experience in the use of steam.

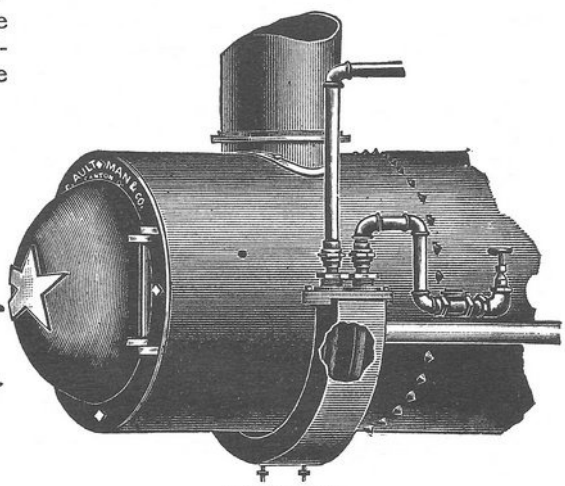


OUR REVERSE LEVER.

We furnish the locomotive link for reversing the course of the engine. All other reversers are cheaper, and are inferior, and they are used because they are cheaper. Engines having cheap reversers use a good deal of ink in bolstering up their various devices—a complete waste of effort so far as engineers of experience are concerned. Our lever not only reverses the course of the engine, but increases or diminishes the power, as required. The front notch in the quadrant applies the full force of the steam in moving forward. The rear notch gives the full power in moving backward. The intermediate notches admit the application of lighter power, thus economizing the use of steam to the greatest possible extent.



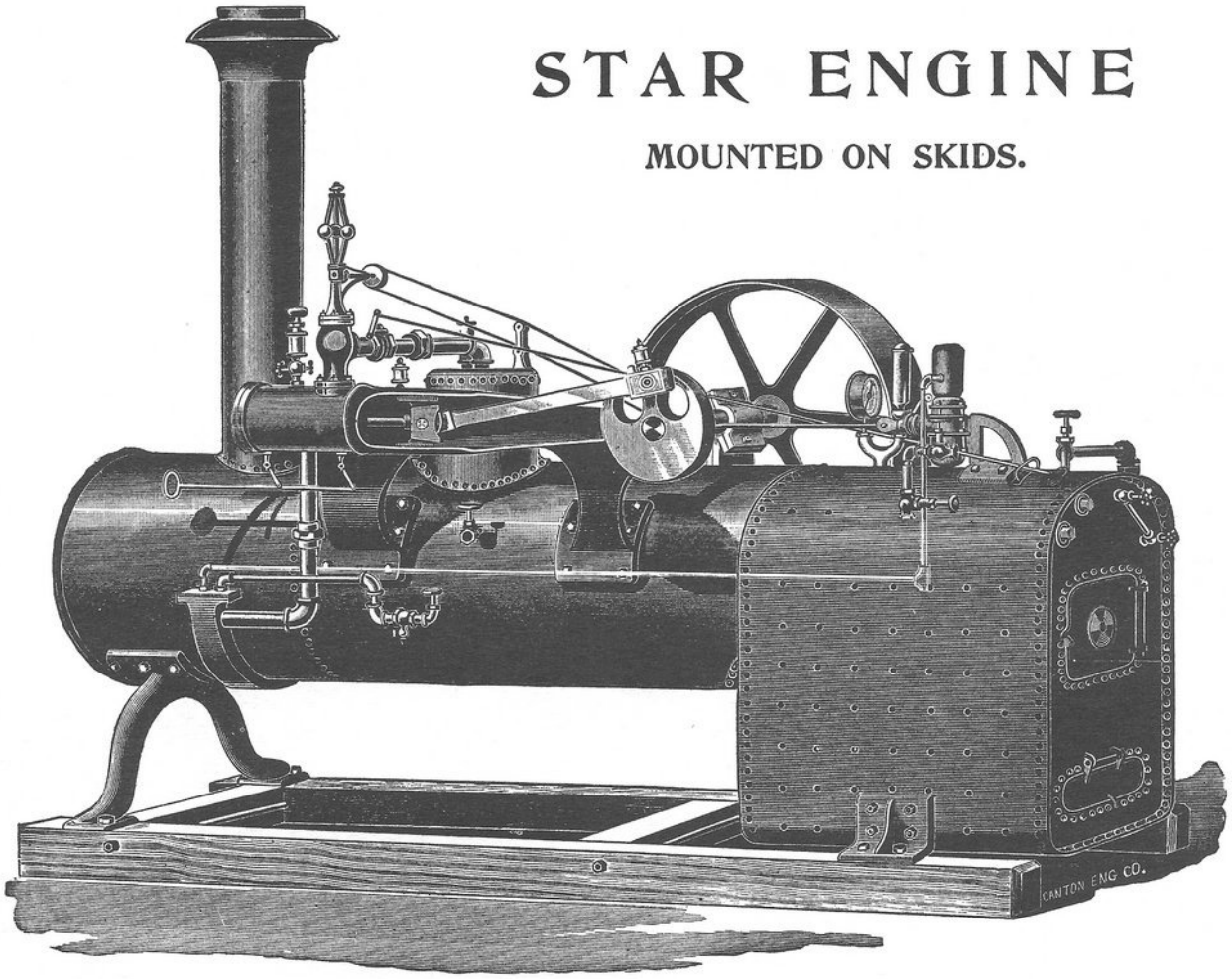
THE REVERSE LEVER.



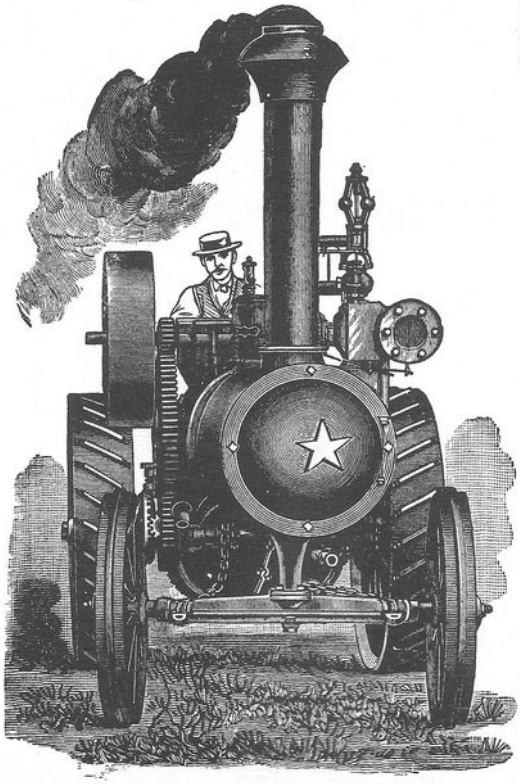
HEATER.

STAR ENGINE

MOUNTED ON SKIDS.



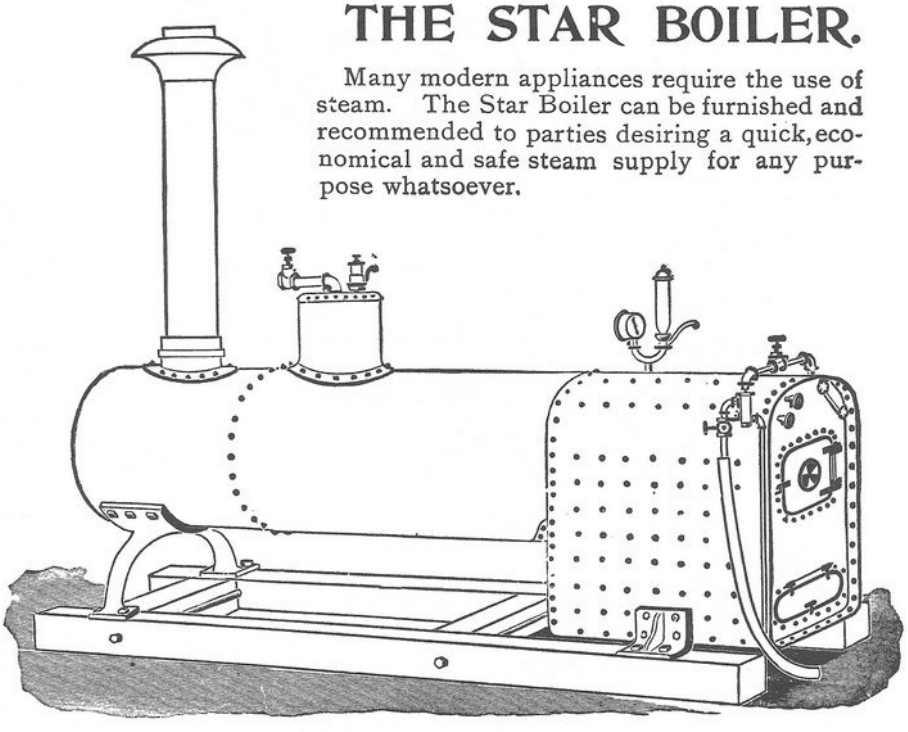
C. AULTMAN & CO. are prepared to furnish the Star Engine in standard sizes mounted on skids, or timbers, upon which it is supported in the manner shown in the cut. Thus mounted and equipped with all the improvements which characterize the engine on wheels, the Star constitutes a Semi-Portable Engine which certainly acknowledges no superior. The cut shows engine on left side. If so ordered we can furnish the Star on skids with engine on the other side of boiler.



FRONT VIEW OF STAR.

THE STAR BOILER.

Many modern appliances require the use of steam. The Star Boiler can be furnished and recommended to parties desiring a quick, economical and safe steam supply for any purpose whatsoever.



MONITOR.

MONITOR engines have been furnished to our trade during the past seventeen years. They can be recommended and guaranteed in every respect. They have, however, peculiarities which fit them for a special field in which no effort has been able to displace them.

The arrangement of the Monitor boiler enables it to dispense with special shapes and devices for the protection of the crown-sheet in going up or down hills. The water always has sufficient depth. The weight of the machine centers at a point so much lower than that of other engines that the Traction Monitor can go where they dare not venture. It will be easily and correctly inferred that as a hill and mountain climber the supremacy of the Monitor over ordinary engines is incontestable.

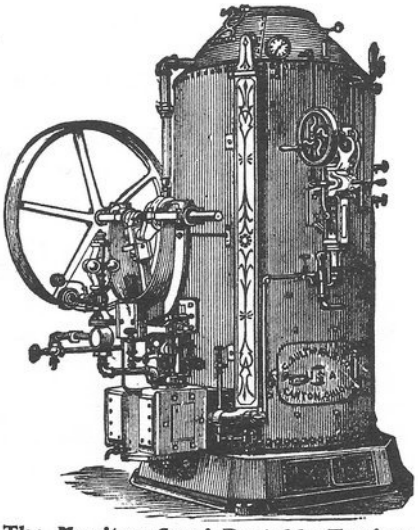
One of its great advantages, and one that is apparent to everyone, is its great convenience. The cylinder is low down, where all its parts are most easily got at for adjusting, oiling and cleaning. The machine is turned as quickly, and in as little space as a cart. It is set for work at once without any of the delay in bracing and digging required by other engines. By turning the forward truck at right angles with the rear truck, it is sufficiently braced; and as for leveling, the several feet of water over the crown-sheet obviate danger, thus dispensing with any such necessity.

The fire-box is circular, with water-heating compartment all around. The crown-sheet is arched, oval-shaped. The great strength of this shape needs no comment. Sediment cannot accumulate upon an oval surface. The extraordinary facility of the Monitor for getting up and keeping up steam is due to its large and carefully distributed heating surface. The upright is quicker fired up and got ready than any other engine. The Traction Monitor has our compensation gear, two speed gears and locomotive link reverse.

Each engine will be mounted on our wrought-iron and steel trucks, and will be furnished with pole, whiffletree, stay-chains, neck-yoke, and brakes for truck, with all fittings necessary for the engine; such as, governor, self-feeding cylinder lubricator, oil-cups, try-cocks, steam-gauge, glass water-gauge, whistle, locomotive "pop" safety valve, locomotive blower, pipe wrench, hose for water and hose for steam flue-cleaner, fire poker, extra glass for water-gauge, water screen, funnel for filling boiler,, oil can, etc. In fact, nothing is omitted that is convenient or necessary for engine.

The Monitor Semi-Portable Engine

Requires only a small space. Being made to stand the strain of field work, the engine and boiler are naturally better made than the cheap semi-portables. It can be recommended for all uses that are in the range of its capacity. We also furnish the Monitor boiler for Steam heating and for running other engines.

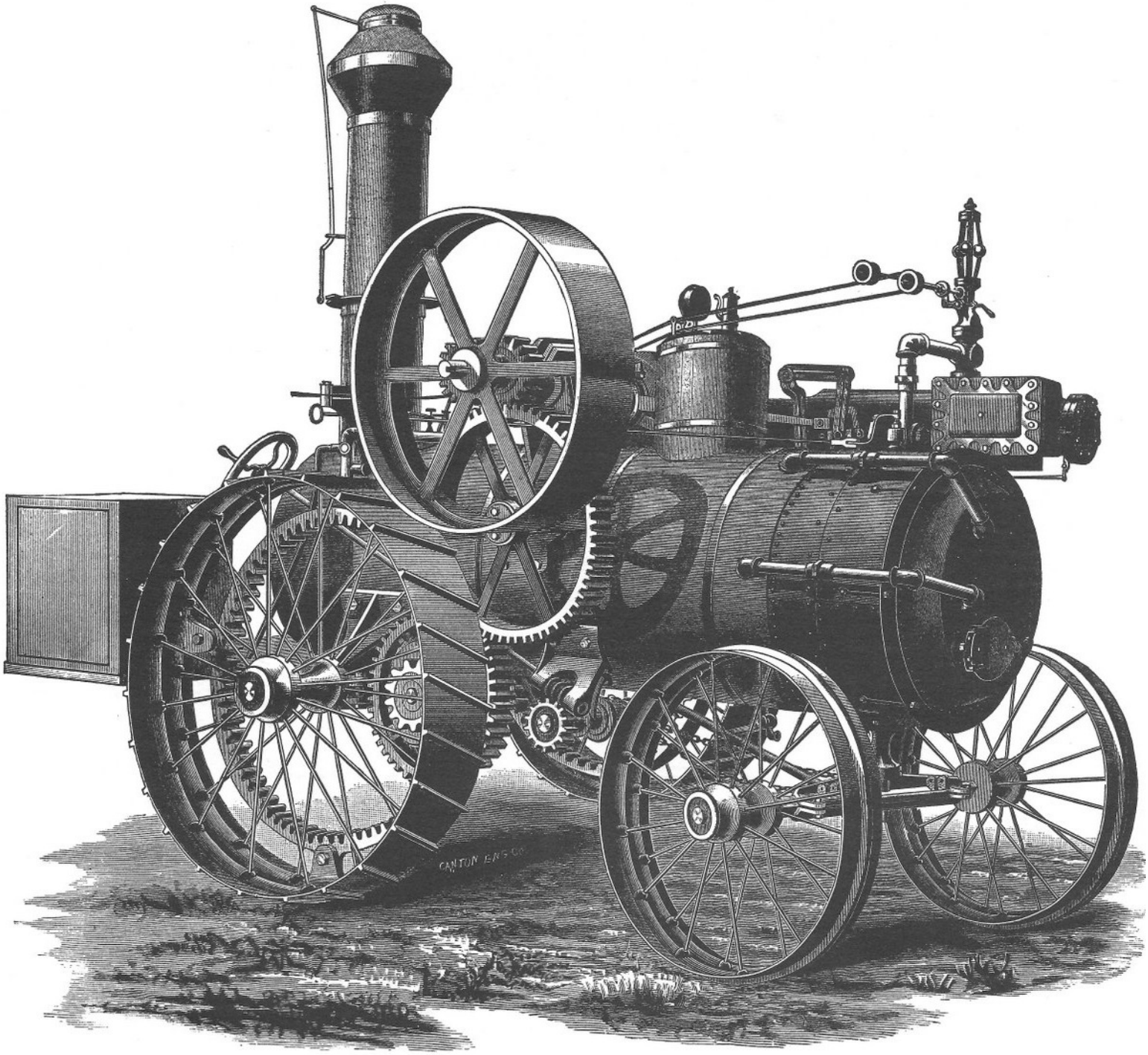


The Monitor Semi-Portable Engine.

PHŒNIX ENGINE.

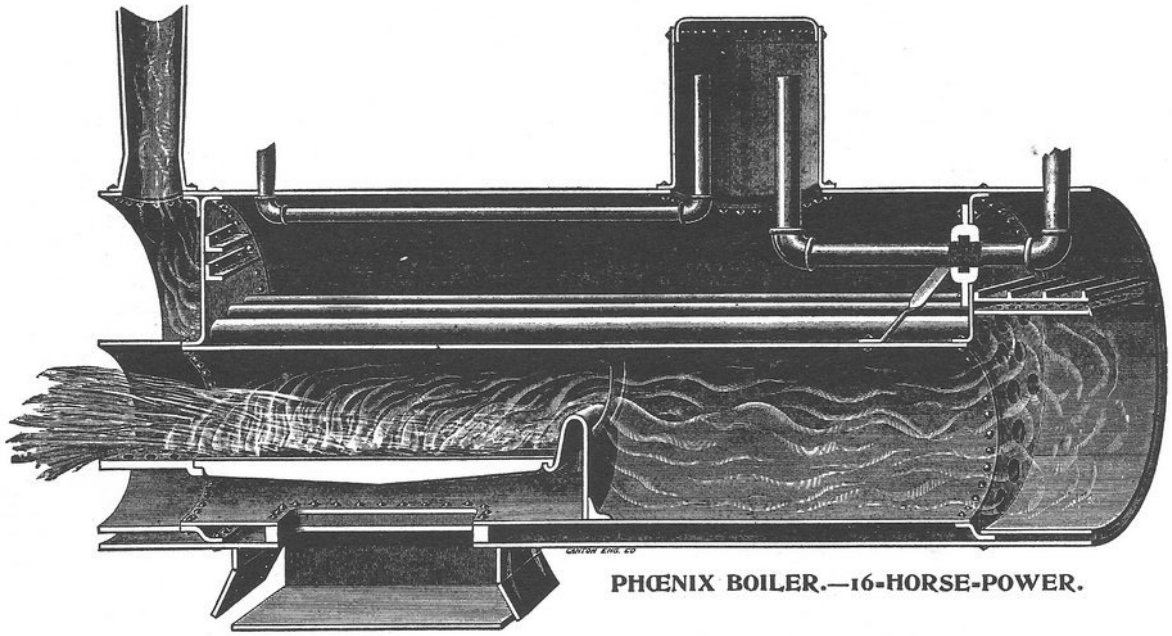
THE specially characterizing features of the Phœnix are confined to the boiler construction. Perfect success in straw firing was somewhat slow of attainment, but no problem in agricultural economics has been solved with more entire satisfaction to those directly interested.

So far as engine parts are concerned, there is little new to be said, as these are mainly the same as those employed on the Star and Monitor. The Phœnix is equipped with such of our devices as are applicable to a straw-burner; these include the balanced valve, the automatic exhaust and the reverse link. The engine parts, both in material and construction, will meet the requirements of the most exacting mechanical engineer. Stuffing boxes, valve connections and other bearings are made adjustable, so as to take up and prevent wear with the least possible delay and difficulty.



PHŒNIX (STRAW-BURNING) ENGINE.—Sixteen-Horse-Power Size.

PHŒNIX BOILER.



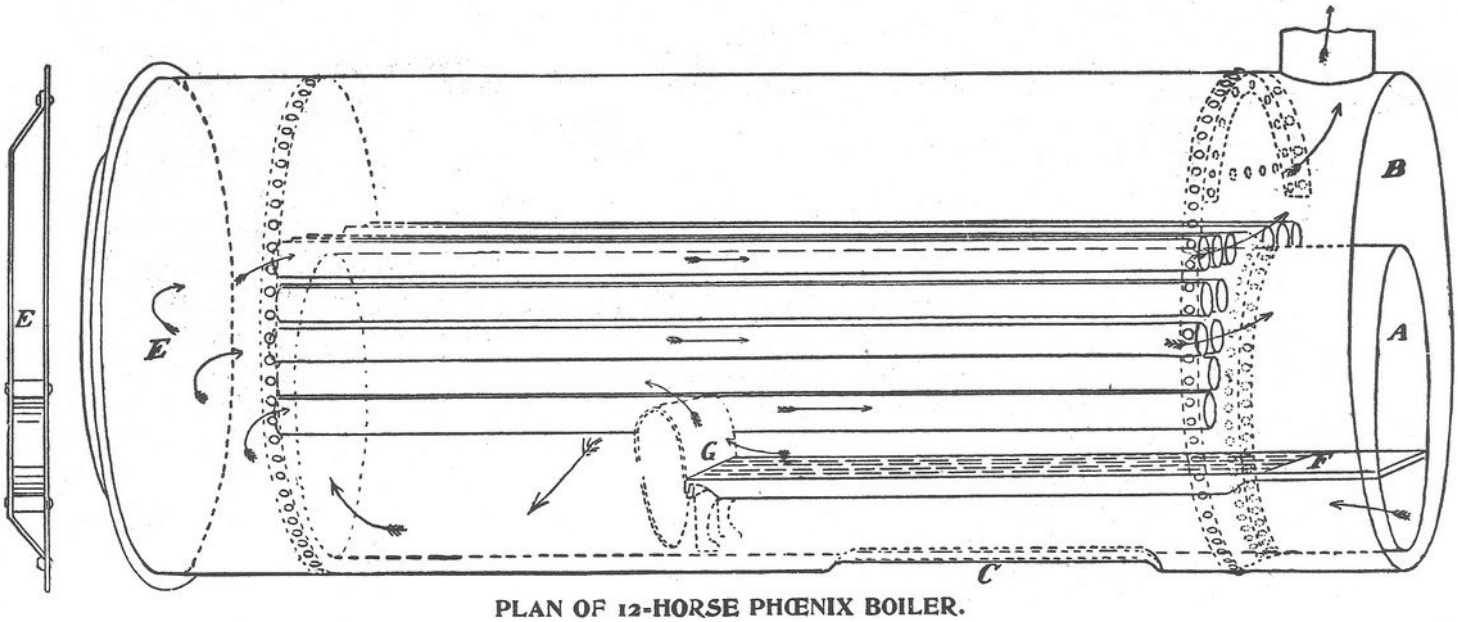
PHŒNIX BOILER.—16-HORSE-POWER.

ORDINARY boilers cannot utilize straw fuel. The Phœnix boiler furnishes large steam-power from a comparatively small amount of fuel, whatever fuel may be used; but it furnishes the best results from a straw fire that have ever been available for practical uses. It has a very large central fire-flue which admits of the convenient use of other fuels, including wood and coal, as well as straw. Eighteen return flues bring back the heat, flame and smoke toward the smoke-stack. The spark-arrester is of the safest and most reliable pattern. The boiler is cased in wood to prevent radiation and condensation. The straw is fed into the central flue through a self-closing door. The products of combustion are drawn through the large flue into the smoke chamber, and against the water head; thence back through the small flues, and, thence, out through the chimney.

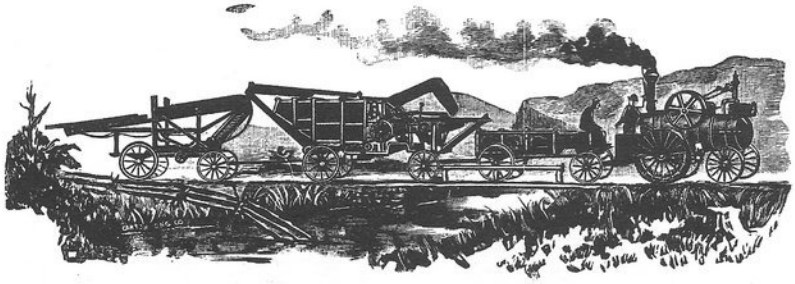
The extraordinary steaming capacity of the Phœnix is partially due to our water-head, shown at E on cut below. The cold water from the pump is delivered into this water-head, which is thus converted into the most efficient heater that was ever attached to a boiler.

This water-head occupies the same place as the ordinary boiler-head. On most boilers it is of cast iron, and the great heat caused by the flames which strike, and are turned by it, is wasted. This heat is saved to the Phœnix by our water-head, which, being connected with the boiler by large circulating steam and water pipes, furnishes so much additional and most valuable heating surface. Both the 12 and 16-horse sizes have this water-head.

Although the Phœnix was constructed expressly with a view to producing steam from a straw fire, it has also proven itself an excellent engine with either wood or coal. Owing to the length of the large flue, which is also the combustion chamber, old rails or long wood can be used. We, therefore, furnish with each engine a set of grate bars, which can be removed, or replaced, to suit the fuel used.

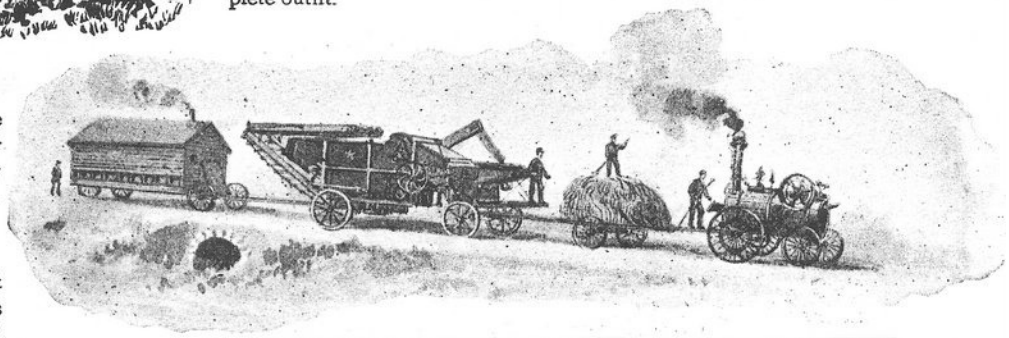


PLAN OF 12-HORSE PHŒNIX BOILER.



COMPLETE PHŒNIX RIGS.

THE two engravings indicate the latitude that is permissible in equipping Star and Phœnix rigs. The rig at the left is fitted out with Star Tank and a Star Stacker. The rig shown below, taken from a photo, has in its train a straw cart and a boarding shanty. The Phœnix is always sold with water-tanks on rear platform. A four-wheeled Star Tank is a most usefnl adjunct to a complete outfit.



SIZES OF THE PHŒNIX.

WE build the Phœnix in two sizes, viz.: twelve and sixteen-horse-power. One or the other of these sizes will meet the requirements of any outfit that is used where straw fuel is employed.

MOUNTING.

Both the rear traction wheels and the front wheels have very wide tires. A set of mud spurs for pulling over slippery ground is furnished with every engine. A tongue, neck-yoke and double-trees are needed at times, and are also provided.

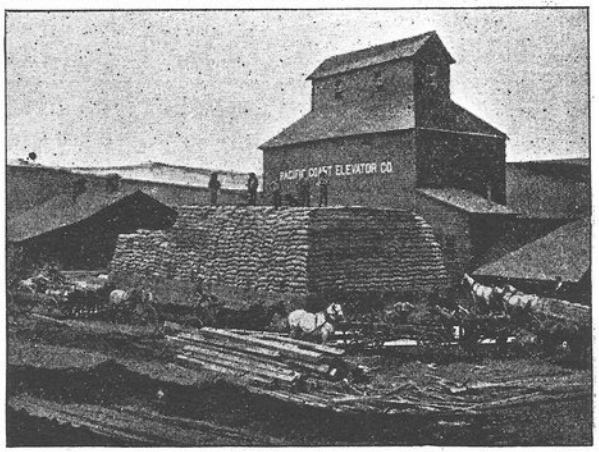
Phœnix Engines are built with water tanks on platform in rear of engine. To purchasers also wishing a first-class four-wheeled tank, and a good pump, we can recommend our Star Tank and our No. 4 Torrent Pump as being the very best in the market.

The driving-wheels of the Phœnix Traction are very wide. Holes are left in the tires for mud spurs, and a set of these are always furnished.

The chimney is of a special pattern. Both Chimney and Spark Arrester are designed with a view to assure safety against loss by fire.

Everything about the Phœnix is of the best, both as to build and materials used. To the party who wants a really serviceable engine, made in a first-class manner, and equipped with labor and money saving appliances, such as are possessed by no other engine, we take great pleasure in recommending the Phœnix. It is unanimously pronounced the best in its peculiar field.

WHEAT BLOCKADE IN THE NORTHWEST.

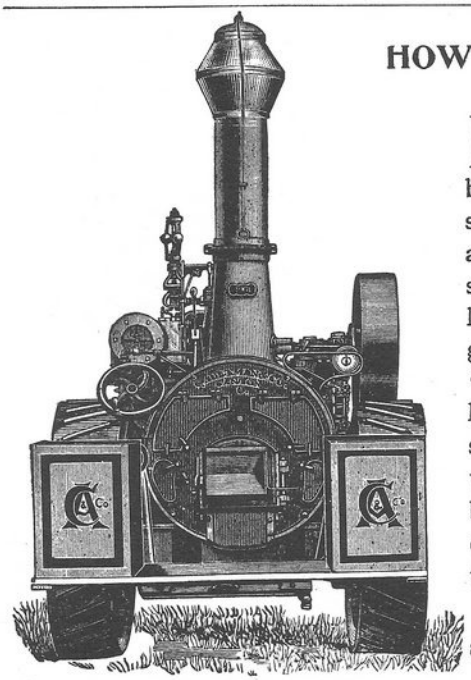


BONANZA Wheat farming in the Northwest is one of the modern wonders in agriculture. The vast areas cropped, and the enormous yields, often overtax all the facilities for handling the product. During the past two seasons the railroads were unable to take care of it. The illustration shows how wheat was stored during the blockade.

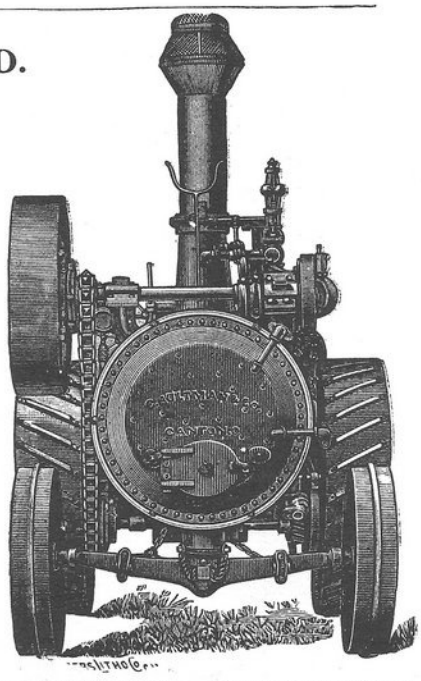
HOW THE PHOENIX IS FURNISHED.

EACH engine will be mounted on our wrought iron and steel trucks, and will be furnished with pole, whiffletree, stay-chains, neck-yoke and brakes for truck; also, all fittings necessary for the engine, such as governor, self-feeding cylinder lubricator, oil cups, try cocks, steam-gauge, glass water-gauge, whistle, locomotive "pop" safety valve, pipe wrench, suction hose, flue cleaner, fire poker and scraper, straw fork, straw funnel, extra glass for water-gauge, water screen, funnel for filling boiler, oil can, etc. In fact, nothing is omitted that is necessary or convenient for the engine.

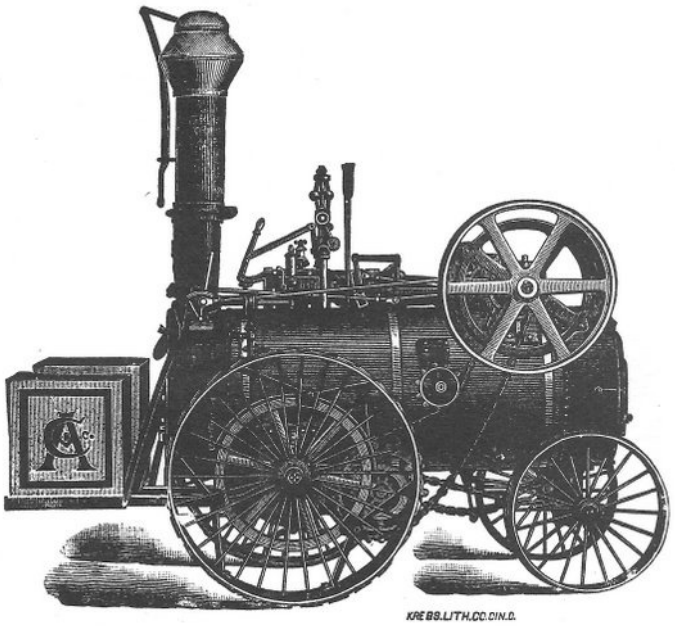
Wood and coal, as well as straw grates are furnished with each straw burner.



REAR VIEW OF PHŒNIX.



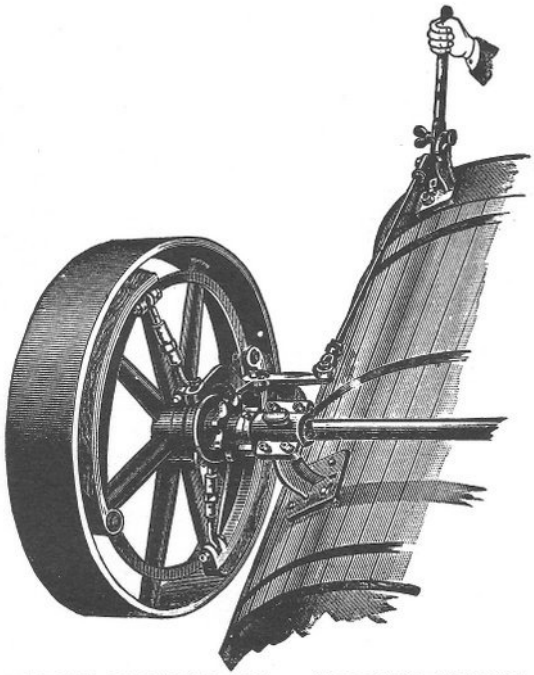
FRONT VIEW OF 12-HORSE PHŒNIX.



12-HORSE PHŒNIX TRACTION GEAR.

THE above cut shows the chain-gear which is furnished with our 12-horse-power Phœnix. This gear has been in use for many years and has always worked satisfactorily.

The 12-horse size also differs from the 16-horse in having no steam dome. The arrangement of the flues in this boiler is such that its steam storage room is most ample, while its load of water is less than that which other boilers are compelled to carry.



PHŒNIX CLUTCH ON 12-HORSE ENGINE.

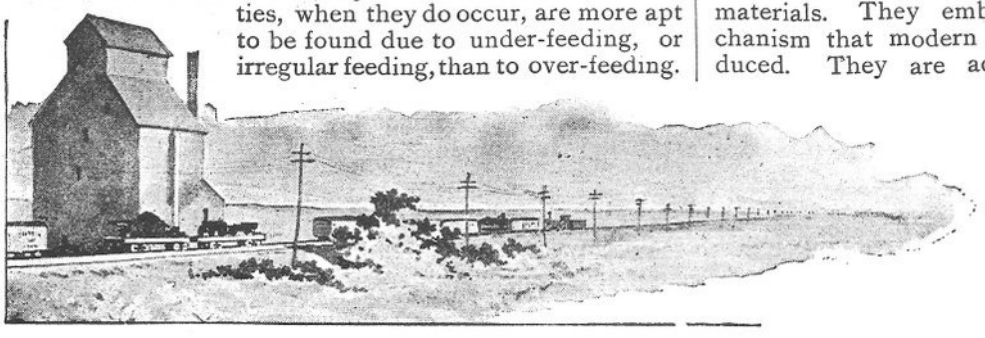
WITH the twelve-horse Phœnix we furnish a first-class Friction Clutch, which enables the engine to start up with as heavy, and sometimes even a heavier load than it can pull. The Phœnix Clutch is very simple in arrangement, does not get out of order, and is conveniently operated by a lever within the engineer's easy reach.

The two-speed gears on the sixteen-horse Phœnix suppress the necessity for a clutch on that engine.

GENERAL REMARKS.

C. AULTMAN & CO. furnish a variety of complete rigs, comprising either steam or horse-power. Their engines, like their threshers, present a range of adaptation which is nowhere surpassed.

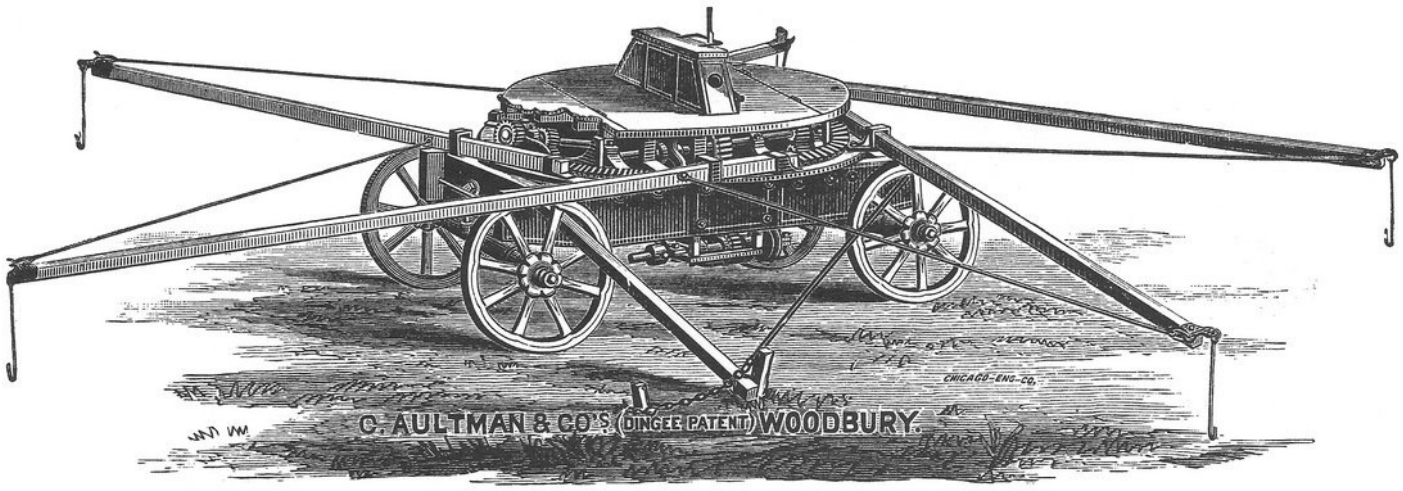
This is of importance. The purchaser, living in a mountainous region, who gets a Monitor Engine, will save himself many grave dangers and vexations which are sure to overtake the owners of other engines. And the buyer of a thresher of too large a capacity not only pays a sum for his machine which is not warranted, but he can not do smaller jobs either as cheaply or as well as if he had bought a machine of the proper capacity. For, in order to do the best work, a thresher must have sufficient work to do, and must be fed with regularity. As a matter of fact, with threshers made by C. AULTMAN & CO., difficulties, when they do occur, are more apt to be found due to under-feeding, or irregular feeding, than to over-feeding.



We believe that our threshing outfits are superior in respect to simplicity and convenience. But this claim to simplicity is also made by machines presenting a confusing and complicated system of operation. It is most satisfactory therefore, if the purchaser can make a careful and personal examination of the machines offered to him, and that is what we invite.

Some manufacturers seek to offer an inducement by the assertion that no experience is needed in running their machines. On this head we may say that caution and experience are good qualities for the manager of a threshing outfit to have. Care is needed in regular feeding and adequate oiling, for every good rig has easily accessible and well protected oiling cups.

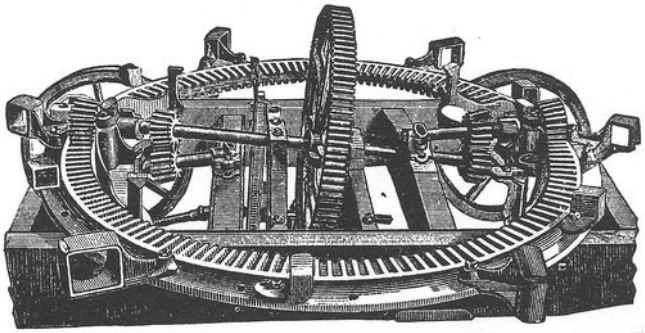
C. AULTMAN & CO. build their machines of costly materials. They embody in them the very best mechanism that modern agricultural engineering has produced. They are admirably and durably finished. Having carefully tested and inspected our machines, it is but natural that, in leaving our works, they should be accompanied by our good wishes and the hope that they will fall into the hands that will show a due appreciation of their merits.



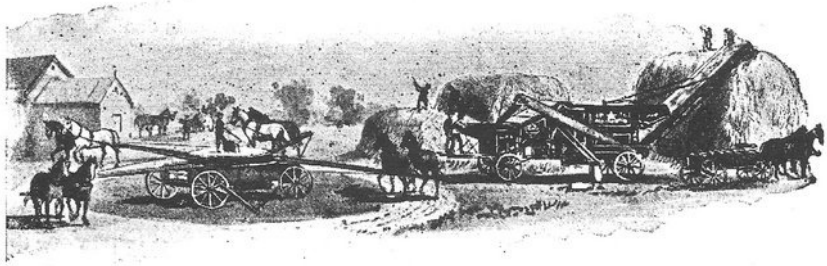
DINGEE-WOODBURY POWER.

WE have furnished our patrons with our Improved Dingee-Woodbury Horse-power during the past few years, and can recommend it in every particular. It is always mounted on a strong four-wheeled truck and is never furnished as a down power. It has an effective brake, by which the motion is quickly stopped.

With this power we also furnish the simplest and best form of equalizer. The driver has a stationary platform, a box over the spur wheel in the centre of same furnishing him a convenient seat. We furnish this power in 10 and 12 horse-power sizes. With each power is furnished a truck complete,, with brakes, lever racks and sockets, and ground fastenings, blocks for tumbling rods, sledge for driving stakes, whiffletrees, neck-yoke, etc., levers complete, with irons, and stay rods and braces for levers, and one short tumbling rod.

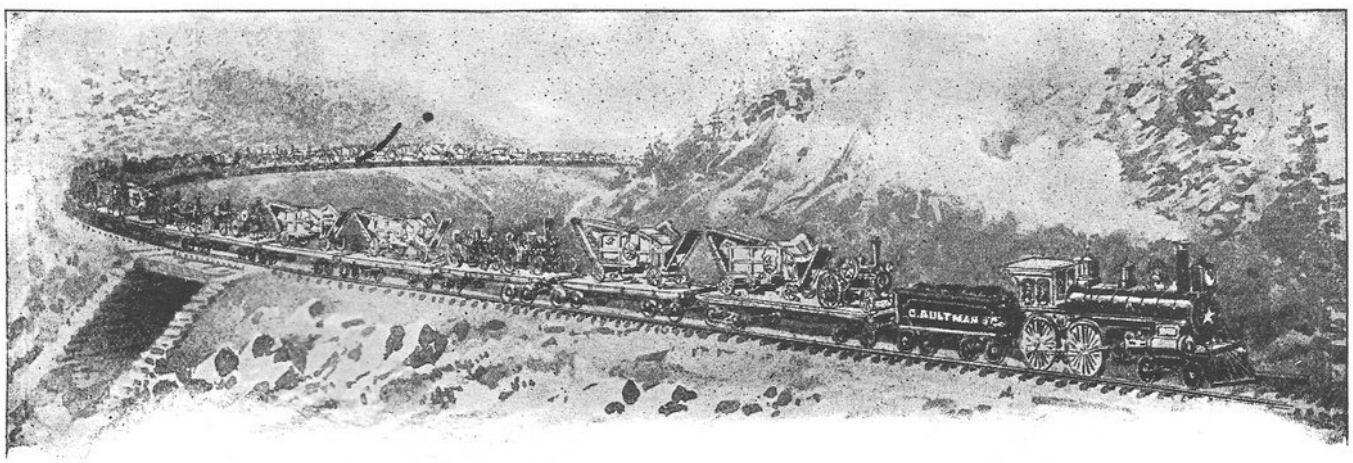


GEARING OF DINGEE-WOODBURY POWER.



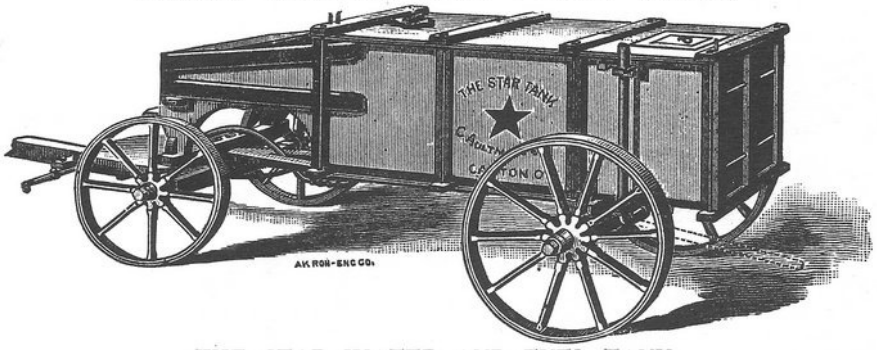
THE CARY POWER.

We can also furnish the Cary Horse-power to such of our customers as prefer that power. The Cary Power has an excellent brake. We furnish 8, 10 and 12 horse-powers, which are all speeded alike, viz: 72 revolutions of the line-shaft to one of the master wheel, when the pivot gear is used; but with the new single gear the speed is about 96 of the tumbling-shaft to one of the master-wheel, when going in the contrary direction, or against the horses. Going in the same direction with the horses the speed is 72 revolutions.



At times the demands of our trade render it necessary to send entire train loads of machines to distant western and northwestern points. The cut represents a train of 36 cars loaded exclusively with threshers and engines of C. AULTMAN & CO.'s manufacture.

STAR WATER AND FUEL TANK.

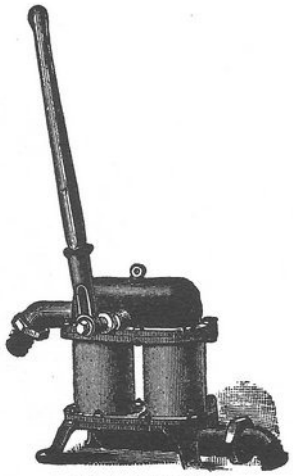


THE STAR WATER AND FUEL TANK.

THE Star Tank has a strong frame, and is heavily braced and ironed. Shrinkage, if any occurs, can be taken up vertically and horizontally The capacity of the Star Tank is ten barrels. It is heavily painted outside and inside. Two partitions, open at the bottom, prevent swashing in going up and down hill. Through a hole below and in front, the tank connects with hose to engine. The exit through this hole is protected by a screen, and a lid on top of the tank gives access for the purpose of cleaning the screen. A drain pipe at the rear permits the tank to be drained of all its water. At front end of tank is the fuel-box. Over front end of this is a seat with hinges, which, being turned down, gives easy access to the shovel of the operator, who has a roomy foot-board to stand upon. The wagon is very strong. By taking out four bolts the tank can be taken off and the wagon used for other purposes.

The front wheels pass directly under the tank, thus permitting the shortest possible turn; a great convenience in hampered places where the tank often has to go for its load of water. As shown in cut with short tongue, the tank is ready to be coupled to engine. With each tank we also furnish a long tongue for horses. The long tongue is slipped through sockets under short tongue where a coupling-pin holds double and single-trees and tongue all in place. When not in use the long tongue has a secure place, with bracket and pin, on top of tank. Pump and hose are furnished with tank only on special order.

NUMBER 4 TANK PUMP.



TANK PUMP.

TO purchasers and owners of tank wagons who desire a good pump, we can recommend the No. 4 Two-cylinder Force Pump. It is made especially for thresher wagon tanks. It works easy, discharges in a continuous stream, and can be placed on side or rear of tank. It will do efficient fire service, and can be used for washing out boiler. It is the easiest working, simplest, and most durable pump of its kind, and it is a valuable outfit for every threshing engine to have. Special description and prices sent on application.

THE STAR SAW MILL

IS adapted to a wide range of work, using either light or heavy power. It is simpler and has fewer parts than other mills; it is easier to set up and keep in order; it is lighter to move; in fact it can be set into operation in a few hours. It is interchangeable throughout, and can be used as a right or left hand mill. It is capable of cutting from 2,500 to 5,000 feet of inch lumber per day.

The Star has all-steel shafts. Bearings are babbitted and the whole constructed in a practical manner, making it the most desirable mill for simplicity, convenience and durability.

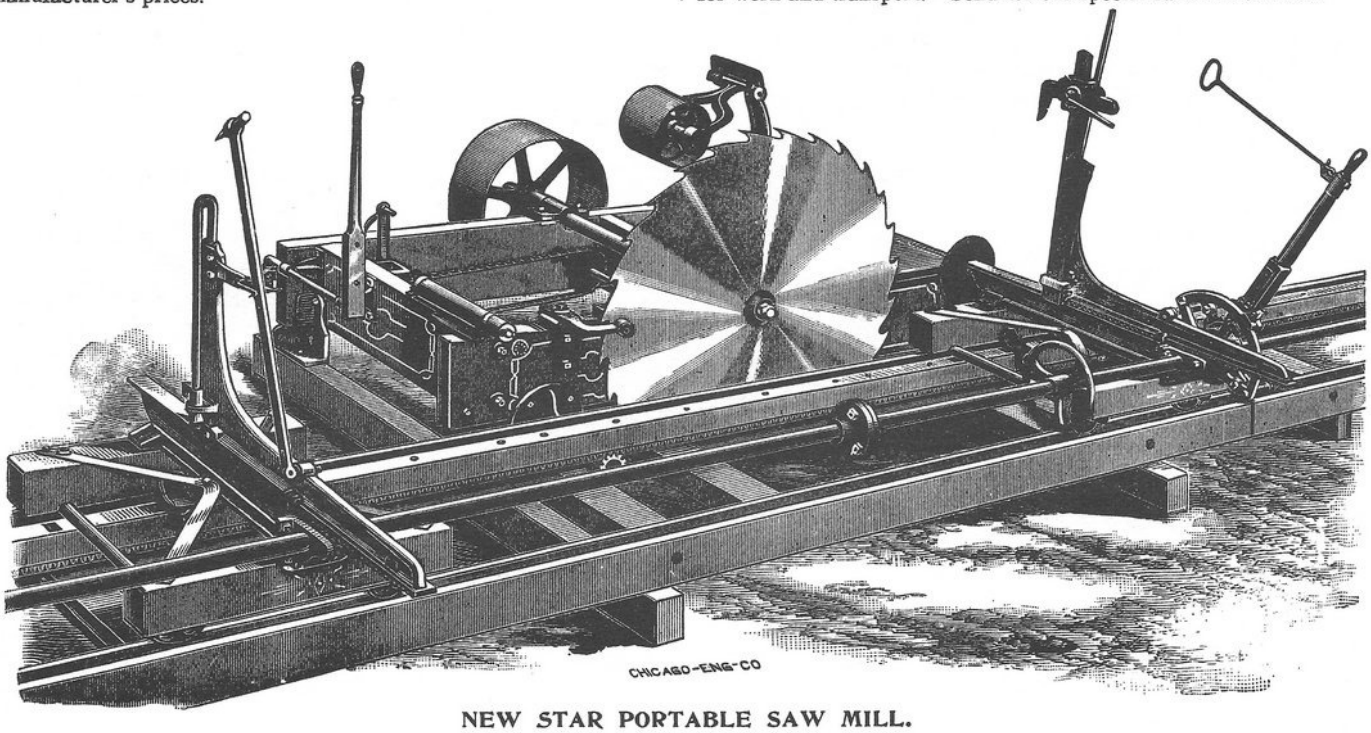
These mills are furnished with patent dogs that are equal if not superior to anything yet offered for convenience and durability.

We can furnish such saws as our customers may prefer at lowest manufacturer's prices.

Unless otherwise ordered, the mill will be furnished with 48 feet of track, all framed and painted, ready to stake down. This is sufficient to saw timber 28 feet long; extensions and an extra head-block can be added at any time, when longer timber is to be sawed.

We can furnish double mills when same are required.

Our Star Junior is a lighter mill, is adapted to sawing into any shape from logs less than 28 inches in diameter, and 20 feet or less in length. With this mill we can furnish a Picket-slitting Attachment, capable of turning out from 6,000 to 10,000 pickets per day. The pickets can be of various widths, as may be desired. A 10-horse power engine is required, but a 12 or 16-horse power engine is not objectionable. Our mills are equipped with every convenience, both for work and transport. Send for our special saw-mill circular.

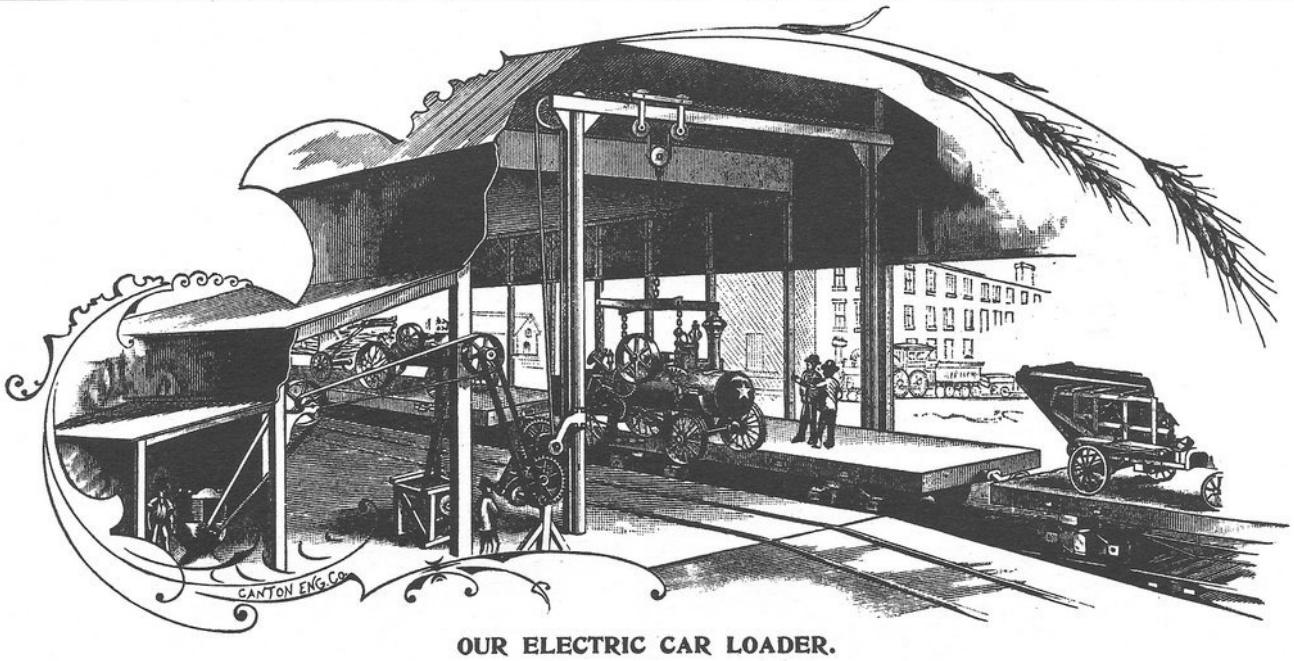


NEW STAR PORTABLE SAW MILL.

POWERS AND DIMENSIONS OF C. AULTMAN & CO.'S ENGINES.

DIMENSIONS OF STAR ENGINES.

Power of Engine.	BOILER. Length of Boiler.	Diameter of Boiler.	Length of Fire Box.	Width of Fire Box.	Height of Fire Box.	Number of Flues.	Length of Flues.	Diameter of Flues.	Heating Surface.	ENGINE. Bore of Cylinder.	Length of Stroke.	Revolutions per Minute.	Diameter of Balance Wheel.	Width of Belt Face.	Diameter of Traction Wheel.	Width of Traction Tire.	Diameter of Front Wheel.	Width of Front Tire.
H. P.	In.	In.	In.	In.	In.	No.	In.	In.	Sq. Ft.	In.	In.	No.	In.	In.	In.	In.	In.	In.
10	115	28	35	23	33	32	60	2¼	134	7⅜	10	212	37	9	56	10	40	5
12	127	28	35	23	33	32	72	2¼	158	8	10	212	37	9	60	12	43	5
6	108	24½	30	20	26	28	60	2	100	6¼	8	240	33	8	54	8	36	3½
6 Plain Engine.	108	24½	30	20	26	28	60	2	100	6¼	8	240	33	8	48	4½	36	3½



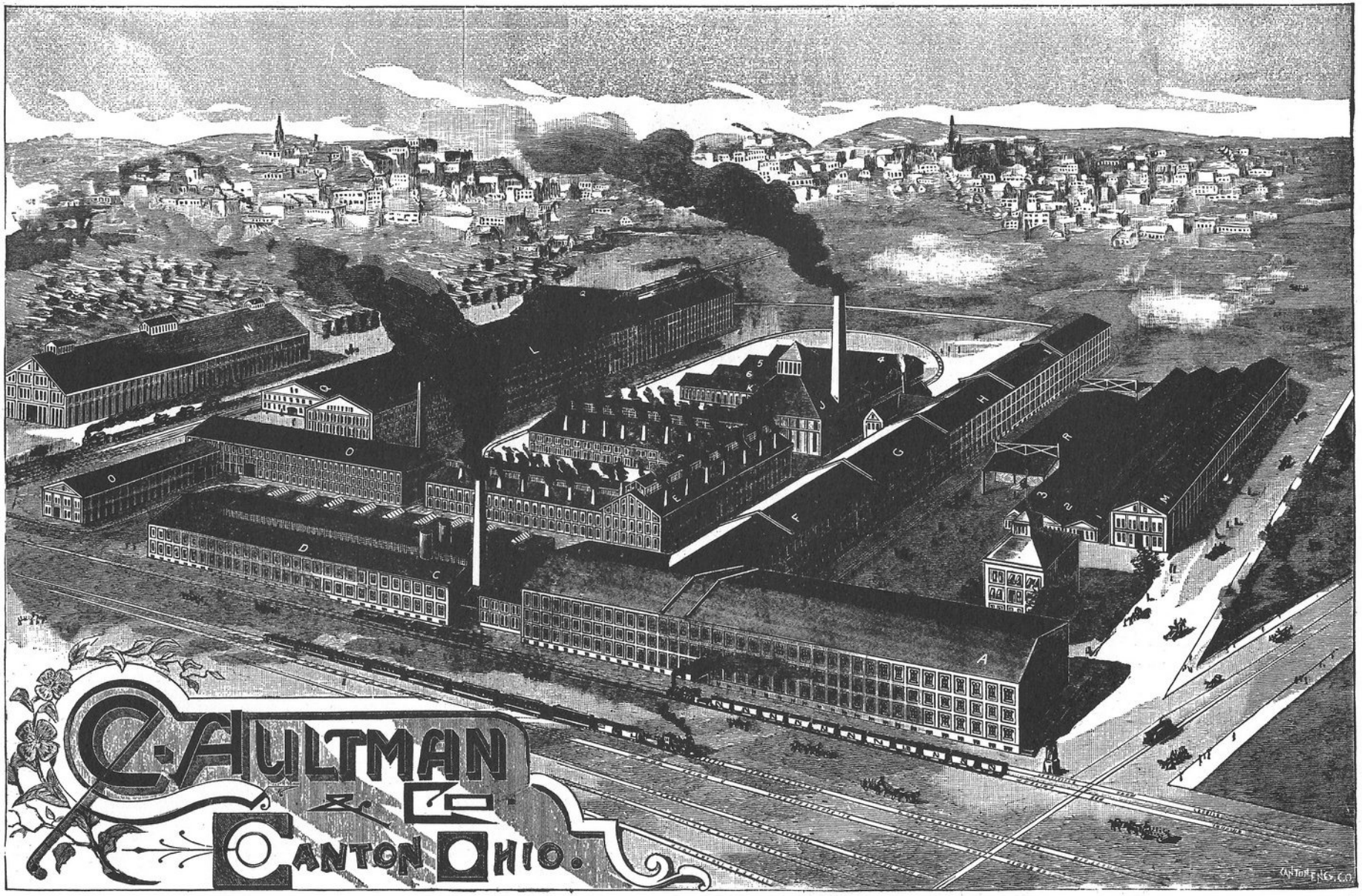
OUR ELECTRIC CAR LOADER.

DIMENSIONS OF CANTON MONITOR ENGINES.

DESCRIPTION.	6 HORSE-POWER.	10 HORSE-POWER.	12 HORSE-POWER.	16 HORSE-POWER.
Diameter of Cylinder,	6 inches.	7½ inches.	8 inches.	8 inches.
Stroke of Crank,	7 inches.	8 inches.	9 inches.	9 inches.
Diameter of Fly Wheel,	33 inches.	36 inches.	40 inches.	40 inches.
Width of Face of Fly Wheel,	7 inches.	8 to 10 inches.	12 inches.	12 inches.
Revolutions per Minute as set to run,	215	205	192	192
Height of Boiler,	67 inches.	68 inches.	68 inches.	74 inches.
Diameter of Boiler,	36½ inches.	38½ inches.	41½ inches.	43½ inches.
Diameter of Fire Box,	31½ inches.	33½ inches.	37 inches.	38½ inches.
Height of Fire Box,	26 inches.	26 inches.	27 inches.	30 inches.
Number of Two-inch Flues,	67	78	90	100
Length of Two-inch Flues,	43 inches.	44½ inches.	44½ inches.	46 inches.
Number Square Feet Heating Surface,	119	155	181	212
Number Square Feet of Grate Surface,	4 93	5 94	7 21	8 08

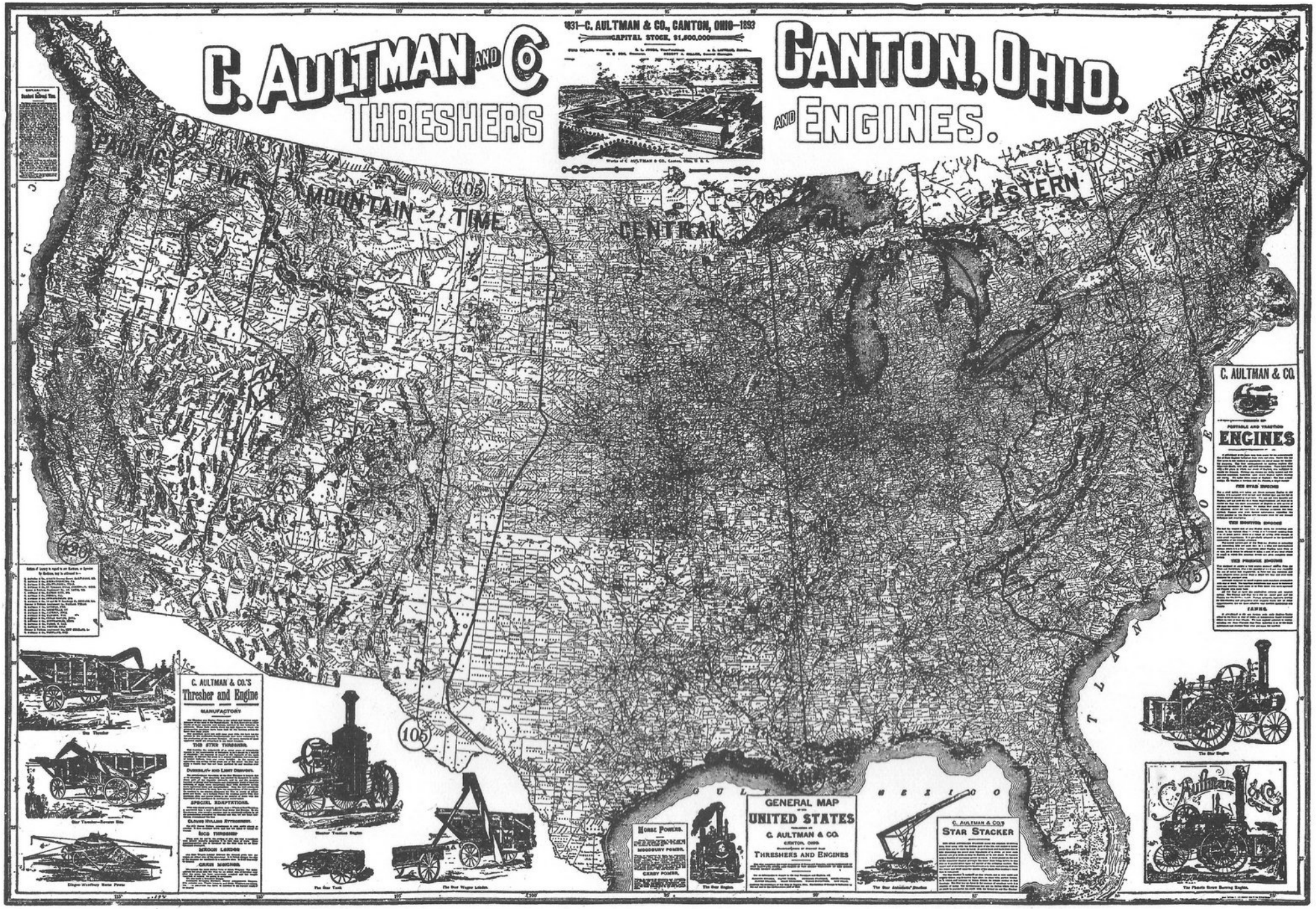
DIMENSIONS OF THE PHŒNIX ENGINES.

Power of Engine.	BOILER. Length of Boiler.	Diameter of Boiler.	Length of Fire Flue.	Diameter of Fire Flue.	Number of Return Flues.	Length of Flues.	Diameter of Flues.	Heating Surface.	ENGINE. Bore of Cylinder.	Length of Stroke.	Revolutions per Minute.	Diameter of Balance Wheel.	Width of Belt Face.	Diameter of Traction Wheel.	Width of Traction Tire.	Diameter of Front Wheel.	Width of Front Wheel.
H. P.	In.	In.	In.	In,	No.	In.	In.	Sq. Ft.	In.	In.	No.	In.	In.	In.	In.	In.	In.
12	106	40	82	25	18	82	2¾	157	8	10	212	40	9	56	14	36	10
16	124	42	96	25	20	96	2¾	185	9	12	175	48	10	66	16	42	12



WORKS OF C. AULTMAN & CO., CANTON, OHIO, U. S. A.

A, Warehouse and Repair Department.
B, Iron Finishing Rooms.
C and **D**, Foundry.
E, Forges and Blacksmithing Department.
F, **G**, **H** and **I**, Wood-working Departments.
J, Power Plant. **K**, Boiler Work.
L, Thresher and Engine Warehouse.
M, Show-Room and Storage.
N, Boiler Department.
O, Engine Department.
Q, Engine Warehouse and Loading-Crane.
R, Dry-House. **1** to **12**, Storage Houses.



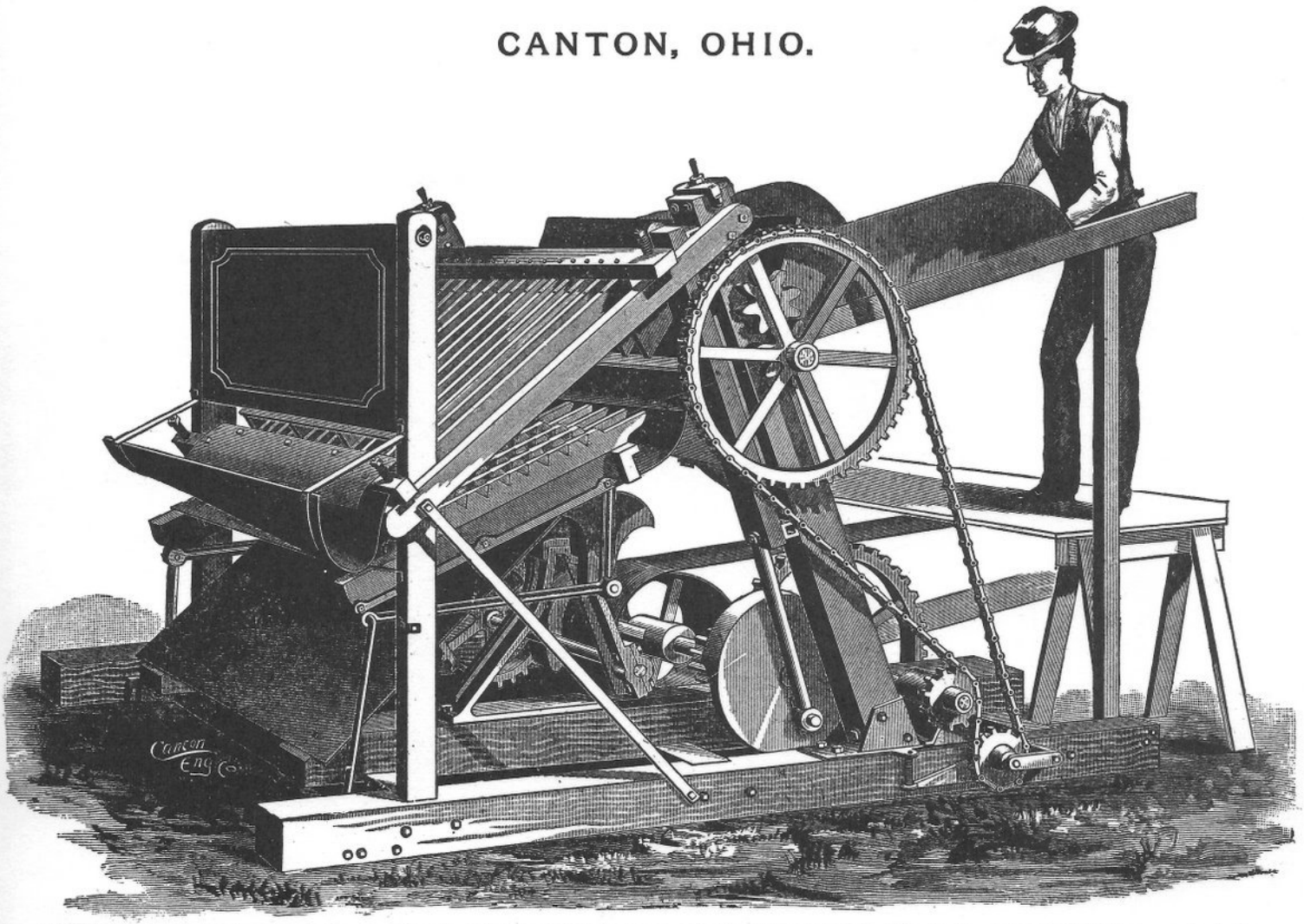
C. AULTMAN & CO.'S MAP.—Above is a photo-engraved reduction of our well-known map. We have issued this map for the convenience of our patrons annually for seventeen years. Geographical changes, railroad and postal additions, etc., are made yearly. The later issues have also shown the standard-time divisions. This reduction from the regular size (about 5 by 6 feet) to the space of 7 by 10 inches, while impairing its usefulness for reference purposes (unless a magnifying glass is used) brings into strong contrast the mountainous, rainless and sparsely settled regions, and the more densely populated areas in the Upper Mississippi Valley.

SHELY HEMP AND FIBRE BRAKE.

MANUFACTURED BY

C. AULTMAN & CO.,

CANTON, OHIO.



THE main purpose of the products of the manufactory of C. AULTMAN & Co. is to save and fit for market the harvested crops. The reader will easily bear in mind the styles of machines and motive powers which the house can furnish for the saving of grains and seeds. This page will apprise him of the fact that C. AULTMAN & Co. are also able to furnish a machine which possesses peculiar advantages for the saving of the fibre crop.

The trade in fibres has, during recent years, assumed very large proportions. The invention of twine-binding harvesters alone has made an annual market for upwards of fifty thousand tons of twine. This prodigious demand has greatly stimulated experiment and invention in processes of raising and preparing fibres for market.

The plant yielding the best and largest amount of strong fibre heretofore grown in our country, is hemp. Experiment has shown that our brake will turn out from six to eight thousand pounds of fibre in a day. The advantages conferred by our brake will be apparent when it is considered that 125 pounds is a big day's work by the hand brake, at $1.25 per day and board.

Our ten-horse Star Engine will run this brake easily. The latter will save eight to ten per cent. of fibre over hand brakes. All the scatterings around the machine are passed through, adding so much to the output. These scatterings and the fine tops are generally burned, as it would not pay to break them by hand. For hand breaking the hemp is kept in stack two months, and about an equal time is required for retting. For our brake the time and labor of stacking can be omitted.

The advantages of machine braking are obvious. Much hard labor is saved. The two months of time saved brings the braking season within the favorable weather of fall instead of, as heretofore, far into the winter season. The crop is fitted for market at once in superior shape and condition.

Inquiries for brakes, engines and complete braking outfits should be addressed to the manufacturers,

C. AULTMAN & CO., CANTON, O.